

# MARINE RECORD

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## FISHERIES OF CANADA.

The fisheries industry is one of great importance in the Dominion of Canada. The amount of capital invested in the industry last year exceeded that of the previous year by \$289,743, and 719 more men were engaged in the work. No less than 79,863 men were occupied in 1900 in exploiting the waters of Canada, using 5,506,760 fathoms of nets and other fishing gear, representing a capital of \$10,000,000.

The salmon-preserving industry of British Columbia, comprising 69 canneries and representing a capital of \$1,380,000, gives employment to 18,977 hands.

The total catch of fish in Canada for the year 1899, as reported by the fisheries department, amounted to \$21,891,706, being an increase of \$2,250,000 over the yield of the previous year. The catch for the Province of Quebec was worth \$1,953,134, an increase over the preceding year of \$191,694.

The lobster plant alone is estimated to be worth \$1,334,180. It comprises 858 canneries, dispersed on the seaboard of the maritime Provinces.

The sealing fleet last year numbered 37 vessels, an increase of 11 over the previous year, and representing an aggregate of 2,641 tons register. The total number of fur-seal skins taken by Canadian sealers during the year 1900 was 35,523. This result is larger by 177 skins than that of 1899, which in its turn largely exceeded the catches of 1898 and 1897. Although the catch of 1900 is slightly in excess of that of 1899, the average catch per vessel would show a falling off if comparison were confined to these two specific years.

Manufactured seal-skin goods have largely advanced in price in the Montreal market, and the profits of retail dealers are said to be very high. They can be purchased in the United States quite as cheaply as in Canada, for the reason that retail dealers here are content with smaller profits.

So far as can be learned, there have been no complaints of transgressions of the law or regulations by the sealers last year; nor have any complications arisen through the application of the law affecting the business.

## THE WORLD'S SHIPBUILDING.

England still holds the first rank among the nations of the world in the building of commercial ships. It is shown in Lloyd's register of British and Foreign shipping that from the shipbuilding yards of the United Kingdom 1,442,471 tons of ships were turned out last year, against 861,692 tons turned out by all the other nations combined. If war vessel are added, the respective amounts are 1,510,835 and 1,053,792. In the last three years, however, foreign countries have doubled their output, while England has only increased hers by 50 per cent. Among other nations, the United States last year built 358,557 tons; Germany 260,751 tons; and France, 165,348 tons. Next came Italy, where, through State premiums, 67,522 tons left the stocks. Germany turned out the largest ship—the Deutschland, with 16,502 tons—while four other steamers had each a tonnage of over 10,000 tons. England built eight big ships, four of them being 12,000 tons each and the Minnehaha 13,403 tons. France is making no headway with steamers, but, in consequence of subsidies, her sailing fleet increases, whereas England no longer pays attention thereto.

## FOR A NAVAL RESERVE.

The Navy Department feels encouraged over the prospects of obtaining from Congress favorable legislation on the bill for the establishment of a Naval Reserve. The great importance of having a well equipped and drilled force upon which the Navy could rely in time of necessity is apparent to any one cognizant of the workings of the Navy and of its great need for a larger trained enlisted personnel. Although

we have before outlined the bill as introduced last session for the Naval Reserve, it would be interesting to again glance at some of its salient features. The Naval Reserve is planned to consist of not less than 5,000 men, taken from the present Naval Militia and from the merchant marine. Lieutenant-Commander Southerland, who has complete charge of the organization of the reserve forces, is of the opinion that not less than 1,500 men could be obtained from the Naval Militia forces, and the remaining 3,500 from the merchant marine and kindred organizations. The idea is to have the Naval Reserve under the exclusive control of the Federal Government, and not, as is the case with the Naval Militia, under State supervision and control. The men in the Reserve would be given actual training on Government ships of war, and would also be equipped by the Government with two suits of clothing. During the cruises the officers and men would receive the pay of their grades. The names of the officers would be carried on the Naval Register.—Army and Navy Journal.

## THE EXPORT GRAIN TRADE.

For the first time the Grand Trunk is now quoting export rates from its lake ports to Europe. The Grand Trunk intends taking a large share of the export grain trade, which has gone heretofore by other routes. Most of the grain will be transhipped from lake vessels to cars at Midland, and then transhipped from cars to ships at Portland, Maine. Twelve cargoes of grain have already cleared for Midland. Between the competition of the Grand Trunk and Canada-Atlantic the Welland canal is likely to have but a small amount of traffic this season in the export grain trade.

## INTERNATIONAL BOUNDARY LINE.

Mr. W. F. King, Chief Astronomer and International Boundary Commissioner, Canada, has completed arrangements for sending out a staff of men to re-survey part of the parallel of latitude which constitutes the boundary line between Canada and the United States. The work will commence in about three weeks' time, and will probably extend over a number of years, as it can only be prosecuted in the summer time. As head of the Canadian surveying staff Mr. King is sending out Mr. James J. McArthur and Mr. F. W. O'Hara. A special study will be made of the botanical features of the boundary, and Mr. James M. Macoun, Assistant Dominion Naturalist, has been commissioned to superintend this work. A considerable staff of men will be engaged. The line to be surveyed approximates 400 miles in length.

## THE OTTAWA AND GEORGIAN BAY CANAL.

Mr. E. E. Sawyer, C. E., of London, England, who represented an English syndicate which is prepared to build the Ottawa and Georgian Bay canal, addressed a meeting of the railway committee at Ottawa, recently.

He describes the canal route, which includes French river, Lake Nipissing and the Ottawa river, and declared that by it the distance from Chicago to Montreal was only five miles longer than from Chicago to Buffalo. He said present plans provide for fifty locks on the canal, but he was confident he would be able to reduce this number by fifteen or twenty. He said there was only 32 miles of canaling on the route. He estimated that by the canal, grain could be taken from Chicago to Montreal for three cents per bushel, while via Buffalo the lowest cost at which grain could be placed in New York would be 4½ cents. The canal route from Chicago to Montreal, a seaport, would be sixteen hours longer in time than to Buffalo. In this connection he read a letter from the Armours, of Chicago, saying that if such a rate could be offered the canal would get as much business as it could handle.

## ASTRONOMICAL DATA FOR MAY.

Astronomical data for May, 1901, furnished the MARINE RECORD by the Washburn observatory:

Mercury and Venus will both appear as evening stars the latter part of the month. The former will pass through superior conjunction May 14th, while the latter has just passed the sun in the same direction, from west to east, and later will shine forth as the brilliant evening star, setting at the same point of the horizon as the sun. Mars is the brilliant red planet seen in the western sky in the evening near the bright star Regulus. Jupiter and Saturn form an interesting pair of planets in the morning sky, but the former is by far the more brilliant. They rise in the south-eastern horizon in the late evening, and are the most conspicuous in the southern sky in the early morning.

The times of sunrise and sunset at Milwaukee for the month are as follows:

	SUNRISE.	SUNSET.
May 1.....	4:46.....	6:52
May 11.....	4:33.....	7:03
May 21.....	4:23.....	7:14
May 31.....	4:16.....	7:22

The times of the moon's phases are:

Full moon.....	May 3.....	12:19 p. m.
Third quarter.....	May 11.....	8:38 a. m.
New Moon.....	May 17.....	11:38 p. m.
First quarter.....	May 24.....	11:40 p. m.

The principal fixed stars visible during the month in the evening hours are:

To the west: Capella, Castor and Pollux, Procyon and Regulus. To the east: Spica and Arcturus.

There will be a total eclipse of the sun May 17th, which will not be visible at all in this part of the world, but for which several parties have left this country to make observations. The shadow of totality will start on the earth's surface a little south-west of Madagascar, and travel north-easterly across the Indian ocean until it strikes the west coast of Sumatra on or near which the greatest duration of totality will occur, 6m. 27s. The shadow will cross Sumatra and swing around to a south-easterly course, crossing the southern part of Borneo and that of New Guinea, and will leave the earth at a point in the Pacific ocean north-east of Australia. The entire journey will occupy 3h. 12m. The unusually long duration of the eclipse makes it especially valuable for observation. The time of day at or near the point of longest duration, where the United States Government party will be stationed, will be 12h. 10m. p. m., and the date May 18th; but owing to the difference of longitude, the same instant in the central United States will be May 17, 11:35 p. m.

## NAVAL RESERVE DRILL.

Plans have been completed for the summer outing and training cruise of the Naval Reserves. The Cleveland training ship Hawk, with the Yantic of the Detroit Naval Reserves and the U. S. S. Michigan, will meet at Put in-Bay on July 9, and will put in the time until July 15 in practice drill and training. Gov. Bliss, of Michigan, has already signified his intention of being present and invitations have been sent to Gov. Nash and the Secretary of the Navy.

At the close of the training cruise the Detroit and Cleveland Reserves will sail for Buffalo and take in the Pan-American exposition. It is expected that the crews will receive very beneficial experience during their cruise.

The assembling of these three war vessels and possibly the U. S. training ship Dorothea of the Illinois Naval Reserves will be the first instance of a naval fleet on the lakes since the war of 1812. As soon as assembled, the entire fleet will be under the command of the captain of the Michigan, and some very valuable lessons in navy tactics will be drilled into the ambitious sailor youths.





## CLEVELAND.

*Special Correspondence to The Marine Record.*

Mr. J. C. Gilchrist has appointed masters for his fleet of 44 steamers and 6 schooners.

The percentage of completion of the protected cruiser Cleveland, U. S. Navy, was 52, on April 1.

Lorain now thinks that it is an important port enough for the Cleveland passenger steamers to make regular calls at.

Freights remain at last week's quotations, viz: 80, 70 and 60 cents respectively from Duluth, Marquette and Escanaba to Lake Erie ports. Lumber from the head of the Lakes, \$2.25 per thousand feet.

The Donnelly Contracting Co., Buffalo, is at work on the Conneaut breakwater and also on their \$250,000 breakwater contract at Ashtabula harbor, construction work has not actually begun yet at Ashtabula nor will it be for a couple of weeks.

The fleet of the United States Steel Corporation will be known as the Pittsburg Steamship Co. This was the name under which the Carnegie fleet sailed. It is understood that the new fleet will use the charter of the former Carnegie line of boats.

The Marine Men's Association, Chicago, insists upon mixing up the names of the Lumber Carriers' Association with that of the Lake Carriers' Association. As they are two distinct bodies the continued mistakes are no doubt slightly annoying as well as being inexact in statement.

The rudder frame for the battleship Missouri, which was turned out at the plant of the Cleveland City Forge & Iron Co., has been completed. The frame which weighs 23,000 pounds was loaded on one of the Cleveland Steel Canal Barge Co.'s boats at the old Globe shipyard en route to New York.

C. E. Hydes, formerly the general agent of the Louisville, Henderson & St. Louis Railroad, has been made the agent of the Northern Steamship Co., at this port, succeeding C. H. Tucker, resigned. Mr. Tucker has decided to go into other lines of business and has surrendered his right to the docks and also the agency. The Northern Steamship Co., retained the management of the dock and appointed Mr. Hydes as the agent.

The new engineer for the Cleveland rivers and harbors district, Major D. C. Kingman, reached this city Saturday afternoon and at once took the steamer Vistor and started out for inspection of the various ports. Colonel Mansfield, Corps of Engineers, U. S. A., the incumbent until May 10, is now in New York, but will return in time to turn the office over. In the meantime Major Kingman is allowing no time to be lost.

The collector of internal revenue has been informed that hereafter stamps need not be affixed to export bills of lading. Up to this time the law required a 10 cent stamp to be attached to all export bills of lading, but the United States Supreme Court has decided this section of the law to be unconstitutional. Many Cleveland shippers are interested in this decision, as there is much exporting here, especially to Canada. Railroad companies are also interested, as in most cases they stood for the stamps.

Mr. A. M. Harvey, who for a number of years was assistant to Mr. H. Coulby, in charge of vessels in the office of Pickands, Mather & Co., has been appointed assistant to General Manager Wolvin of the United States Steel Corporation fleet in the loading of vessels at the upper lake ports. He will be located at Duluth. Mr. Edward C. Collins has been appointed principal assistant to Mr. Mills in dispatch of vessels and management of docks. Mr. Collins occupied a similar position with the Carnegie Steel Co.

In the Helena Mariska-Gould "Soo" collision case the decision of the lower court was overruled. The latter may go into court and compel a division of damages if colliding vessels were at fault. The court decided that the steamer Kalkaska must pay for the schooners J. H. Mead and Mediator, wrecked on Keweenaw peninsula. They were in tow of the Kalkaska, which got seventeen miles out of her course. Negligence on the part of the Kalkaska was proved.

## BUFFALO.

*Special Correspondence to the Marine Record.*

The steamer Bielman reached here leaking with two steam pumps aboard. She went into dry dock for survey and repairs.

The Shipmasters' Association annual roster of members' names is out, besides the portraits of officers, etc., it contains a list of vessels' names and the addresses of owners, also a large amount of advertising, the whole making nearly 500 pages.

Erie canal freights open at 3½ cents on wheat, about 150 boats had cleared this time last season as the canal opened April 25th while the water was turned in May 7th this year. There was a break in the canal at Rochester through an overflow but it was soon repaired.

David Boyd, of the Dominion Bureau on Mines, is preparing a map of the Thunder Bay and Rainy river districts, which will be distributed at the government mineral exhibit at the Pan-American. The map will show the various mineral belts of that rich part of the province.

The new steel cargo steamer, Wilkesbarre, Capt. Dennis Driscoll and owned by the Lehigh Valley Line, grounded at the mouth of the harbor on leaving this port for her maiden trip on Monday. Her draft was only 18 feet and with that she had at least to have got clear of the harbor.

Mr. Mills, treasurer of the Tonawanda Iron & Steel Co., emphatically denied that his company had given in to the demands of the marine engineers. He said that his firm had not complied with a single demand of the engineers and cited many other firms along the chain of Great Lakes that had not.

The large, twin screw, steel steamers North West and North Land are being fitted out in elegant style for the Buffalo-Chicago route. As they are exclusively passenger steamers and the largest on the lakes, an unprecedented season of success, in so far as patronage is concerned, seems to be already assured.

Commodore Williamson, U. S. N., who is installing the navy exhibit, has a great amount of interesting material on hand, including numerous models of naval ships and a considerable amount of ordnance. A wood model, full-sized, of a 13-inch gun, cut in sections to show rifling and thickness of barrel at different distances from the breach, is an interesting feature.

President Ryan, of the National Licensed Tugmen's Association, traveled all the way from Duluth just to call on the members of the union this week. Of course Mr. Ryan likes these thousand mile trips just as well as others accustomed to travel by water, and that, I may remark, is his preferable mode of traveling, however, he was just here for nothing except the visit.

J. E. Ball, who was for a long time head clerk and cashier in the Lackawanna coal office, has taken the position of manager of the Lackawanna line steamers—Lackawanna, Scranton and Russia—with office on the seventh floor of the Dun building. He is also connected with marine insurance, and will adjust lake losses. The public has the utmost confidence in his ability and uprightness.

Major Symons, Corps of Engineers, U. S. A., in charge of the conservancy and improvement of rivers and harbors within this district announces that the shoal at the mouth of the harbor here must be removed before safe navigation can be assured. Certain influences fought the harbor appropriation and this, the greatest year in the history of Buffalo, is likely to suffer therefor. Apeing Chicago may be all right in many ways even to partially destroying the character of the entrance to the port but this is not the season to attempt it, or to give the port the name of being an unsafe one to enter or leave.

## DULUTH-SUPERIOR.

*Special Correspondence to the Marine Record.*

Ore pockets on the docks at the head of Lake Superior are now generally filled to their greatest capacity and the first ore boats to arrive will be promptly loaded.

Those interested in lake traffic in Superior are greatly interested in the measure which has just passed the state legislature regarding the taxation of vessels. It is expected that direct results will be seen after the present year. During the past several years Superior has not derived the benefit of any vessel taxation and citizens generally agreed that something ought to be done to change the existing laws. Efforts have been made for the past two years in that direction, but without avail until the present session of the legislature, when all opposition was withdrawn and the bill in

troduced by Senator Mills was put through the Senate with but one vote against it and through the Assembly unanimously. Another year will undoubtedly see vessels with "Superior" on their sterns and hailing from this side of the bay equally at least with Duluth.

## CHICAGO.

*Special Correspondence to The Marine Record.*

The new steamer W. L. Brown sailed from Chicago Saturday night on her maiden trip, taking a big cargo from South Chicago to Depot Harbor for the Canada-Atlantic line, which has chartered her for the season.

The Rutland line boats, which are running mainly with non-union engineers, will be totally ignored by the union hereafter. The three union men who helped fit out the boats have been expelled from the association.

All union men are locked out from the docks of the Reiss Coal Co. at Manitowoc, Wis. The union demanded the new schedule of wages for the men, which provides that the rate for coal heavers shall be 40 cents, hoisters 25 cents and dock hands 20 cents per hour.

The three clamshell scoops, which are being installed on the docks of the E. L. Hedstrom Coal Co. at Ninety-second street and the Calumet river, will be ready for the first cargo in a few days. It is believed that the clamshells will unload boats at the rate of three tons a minute.

James G. Martin, of the Northern Grain Co. of Chicago, has chartered several ships of the Gilchrist fleet to carry 500,000 bushels of corn from the elevators at Manitowoc, Wis., to this port. The grain was at one time during the winter loaded into boats for shipment to Buffalo at the opening of navigation. When the price of corn on the Board of Trade began to soar it was taken out of the boats and stored in the elevators again. Now it is sold in the Chicago market and is about to be delivered.

When the steamer City of Chicago, of the Graham & Morton line, reached midlake Saturday afternoon, the lookout on the steamer discovered that from the pilot-house he could see Chicago and St. Joseph at the same time. That is a distance of thirty miles in each direction. The Montgomery Ward tower, the Masonic Temple and the Ferris wheel in Chicago could be seen distinctly, and the court house and several church spires in St. Joseph were plainly visible. The mirage lasted several minutes.

The new steel cargo steamer Hendrick S. Holden has cleared this season with what is probably the largest cargo from a point of bulk ever loaded on the lakes. It was 362,000 bushels of oats, or almost enough to fill a good-sized elevator. The cargo was shipped by the Merritt Elevator Co. and consigned to their order at Buffalo. The banner cargo from point of weight was loaded by the steamer Simon J. Murphy last year. It was 269,000 bushels of corn, weighing 8,359 net tons, she loaded on at South Chicago.

The many friends and past shipmates of the late Capt. Thos. Ledden will be sorry to learn of his death on Friday last at his home, 1010 Warren avenue. Capt. Ledden was one of the most successful masters on the lakes, both in sail and steam, and sailed in Messrs. Ayers' employ for a number of years. Capt. Ledden was a gentlemanly, unassuming man, though strict in the discipline of his service to his employers, a kind husband and loving father, and the community is at the loss of one of its best lake navigators.

An important decision was recently handed down by the Court of Appeals in the collision case of the steamer Onoko and the schooner Mary D. Ayer, sunk in Lake Michigan two years ago. The Ayer went down with three of her crew. Suits for \$15,000 against the Onoko for loss of life were instituted. The court held that under the laws of Illinois and Wisconsin and the general maritime laws of the United States the liability for loss of life due to negligence was not a lien upon the vessel at fault. Recovery can only be had against the owners of the vessel.

For the first time the Grand Trunk is now quoting export rates direct from its lake ports to Europe. The innovation makes it plain that the Grand Trunk intends taking a large share of the export grain trade, which has gone heretofore by other routes. Most of the grain will be transshipped from lake vessels to cars at Midland and then transshipped from cars to ships at Portland, Me. Twelve cargoes of grain have already cleared for Midland. It is said that the Grand Trunk and Canada Atlantic are working in harmony as regards rates, but there is much rivalry between the two Canadian routes to secure the largest volume of business. Between the competition of the Grand Trunk and Canada Atlantic, it looks as if the Welland canal will have poor picking this season in the export grain trade.



## DETROIT.

*Special Correspondence to The Marine Record.*

Vessels now in the ice jam in St. Clair river are already under Duluth charters for grain at  $2\frac{1}{2}$  cents on wheat and 2 cents on corn.

The Pusey & Jones Co., Wilmington, Del., are completing a new steel steamyacht, built for Charles J. Canfield, Manistee, Mich. Her hull dimensions are 125 feet, 10 inches over all, 17 feet, 8 inches beam molded, and 10 feet, 4 inches depth molded. She is named the Cangarda and is to be delivered in June.

Capt. L. S. Sullivan, Toledo, has made the following appointments for his fleet this season: Steamer D. W. Rust, Capt. William J. Leavor; engineer, William Decher. Schooner C. C. Barnes, Capt. George R. Bonnah; schooner Geo. G. Houghton, Capt. James Robinson, and the John Schutte, Capt. James Taylor.

Port Huron has had quite a boost in new tonnage, official numbers having been granted this week by the Bureau of Navigation, Treasury Department, to the A. W. Thompson, 2,279 gross tons; S. D. Warriner, 2,279 tons, and the steamer Cartagena, 1,532 gross tons, all steel vessels built at West Bay City and hailing from Port Huron.

The engineers' strike is now a ripple of the past as far as this port is concerned. There is no open communication with Lake Huron yet on account of the ice jam in the rivers, nor is there likely to be what may be termed safe navigation for this week, in spite of the splendid warm summer weather we are having. The latest phase of the ice has been soft and slushy on top, with firm, green ice underneath, but it has now got to the point when the rivers may be cleared within a few hours, and yet, the same appearance confronted the situation this time last week.

The Canada's cup defender Illinois, built for a Chicago syndicate, by Lawley, Boston, Mass., after Crowninshield's design, is now at her home port. The owners of both the Detroit and Cadillac hope that the Illinois will be a success, that she will cut through the waters of Lake Michigan in a manner which pleases her owners during the early trials. There would be little satisfaction in going over to Chicago and beating a faulty boat. Worthy rivals are wanted for the two centerboarders that will fly the burgees of the Detroit Yacht Club and the Detroit Boat Club, so say our people here.

The new steel steamer Northwestern, from Chicago to Liverpool, was placed in dry dock on Tuesday, to have two new blades fitted on her screw and for bottom survey in case there was any ice damage. The Northwestern was drifting around in the ice for several days and any paint, anti-corrosive, or anti-fouling composition must have been fairly cleaned off. Her sister ship is now in the same fix. These little craft will batterfing across the Western Ocean all right during the summer months and they can probably migrate South in the winter by picking up a route in the Gulf trade or West Indies.

Bay City lumbermen who are building or operating mills in the Georgian Bay district of Ontario, are up against Canadian regulations regarding the importation of alien labor. It has been impossible for them to secure the requisite skilled labor where their mills are located, and a great many of their old employes have been taken from Michigan. Recently, Canadian authorities have been investigating the matter, with the result that several of the men who were shown to have been taken there under contract, have been ordered home, and a man who recently returned from Blind river says that it looked as if every one of them would be sent back.

Commodore John C. Shaw, of the Detroit Boat Club syndicate, has just received from the Hanley Construction Co., of Quincy, Mass., the first photographs of the Canada cup defender Cadillac, building there for Detroit owners. The pictures were taken on April 22, since which time much work has been done on the yacht. A distinctive feature on the Cadillac is her big shoulders, as she seems to have her power abreast of her mast. While her transom is broad, it is not flat, like the Detroit's, but is curved on the top and comes to a little point on the under edge. This model of hull was in great favor among the old time wooden ship and yacht builders and more nearly conforms to the outline of a fish than any others. In several instances, fancy bottoms constructed on the same general plan were wonders at sailing, but no one cared about owning an apparently freak-built yacht, so that in modifying the lines the original form was sacrificed. In cargo carrying boats trade conditions rendered such a form of hull unsuitable, so, for obvious reasons, the greatest beam was placed in the wake of the mainmast or towards the center of the length.

## FLOTSAM, JETSAM AND LAGAN.

Capt. Gaskin, manager of the Montreal Transportation Co. at Kingston, went to Lambton on the St. Clair river to survey the damage done the Bannockburn by collision with the steamer Kearsarge in the ice Saturday afternoon. The bulwarks and steering gear were carried away and the steamer has a broken wheel.

The British tramp steamer Myrtledene, which arrived recently at Philadelphia, brought one of the most valuable consignments ever unloaded at that port. The cargo consisted of 1,240 tons of silver ore, valued by the United States appraisers at \$380 per ton, or a total valuation of \$471,200. The vessel was loaded at Autofagasta, Chile, and sailed from that port on January 28.

It is reported from St. Joseph, Mich., that the Graham & Morton Transportation Co. has secured the passenger steamer Petoskey and the steam barge Buckley. They are both good vessels and meet the pressing requirements of the company, which is at present handicapped by managing lines from Chicago to Holland and Chicago to St. Joe, with a limited number of vessels.

Capt. John C. Silva, Grand Captain of the American Association of Masters and Pilots of Steam Vessels, is commander of the steam yacht Dreamer, of Boston, Mass., owned by Mr. Lawson. The yacht is fitting out, and it is reported that she will go on a Mediterranean cruise this summer, if so, Capt. Silva will be missing from Dorchester, Mass., for quite a little while.

The steamer A. A. Parker, bound up, went aground in the fog between Southeast Shoal and Pelee Island last Saturday night. The wrecker Wales was sent from Amherstburg, Ont., to her assistance, but the Parker released herself before the tug got there, and passed up apparently uninjured. It is believed that the Parker struck on the wreck of the steamer Specular, which sank in that vicinity last year.

"The scheme to connect the Adriatic at Trieste with the North Sea, by a canal from the Elbe river, which is proposed by a bill introduced in the Austrian Reichsrath, may prove too costly to undertake," remarks the Brooklyn Citizen, "but it shows that even the so-called 'effete nations of Europe' have a clear understanding of the value of canals to commerce. If the astronomers who think they see the canals of Mars are right, the people of that planet have an understanding of the matter, too."

In local marine circles a good story is told regarding a well-known Rockland sea captain, who, however, has since abandoned the rolling deep and is gaining a livelihood on the land. Not many moons ago this captain arrived at New York with the loss of a spanker. Wishing to obtain one which he had at his home in this city and wishing at the same time to notify his wife Sadie to come on to New York, he sent to his agent a brief but expressive telegram. This is what the agent read: "Send Sadie and spanker."—*Courier-Gazette*, Rockland, Me.

The Polson Iron Works, Toronto, Ont., is one of the busiest marine industries in the Dominion at this time. Besides government contracts including a large dredge for use in the St. Lawrence, the firm has orders for hulls, engines and boilers to be shipped to various points, one contract being for a New Westminster, B. C., marine outfit, consisting of a fore and aft compound surface condensing engine, having cylinders 12 ins. and 26 ins. diameter, 18 ins. stroke and Clyde boiler 9 ft. diameter x 10 ft. long, to pass Government inspection for 150 lbs. steam.

THE H. W. Johns Mfg. Co., 100 William St., N. Y. have secured a number of contracts for application of their asbestos coverings, among which are the following: U. S. S. Illinois—Insulation under protected deck. Am. Aristotype Co., Jamestown, N. Y.—fire felt sectional covering and cement felting. Syracuse Rapid Transit Co., Syracuse, N. Y.—fire felt sectional covering. Covering of pipes at the residence of C. F. Deterih, Millburn, N. Y., for Hitchings & Co. has been completed. Asbestocel covering used. Covering for heating pipes at Museum of Art, N. Y. City has been completed. Asbestocel covering has also been used throughout the entire plant of the Scoville Mfg. Co., Waterbury, N. Y. The contract has also been awarded The Johns Co. for covering all high pressure and heating lines at Atlantic Mutual Building, Wall & Williams Sts., N. Y. City, where Asbestosponge moulded covering was used. United & Globe Rubber Mfg. Co., Trenton, N. J. asbestocel covering. National Conduit Co. Hastings—fire felt coverings. Lister Agricultural Chemical Co., Newark, N. J., fire felt coverings. Albany Iron Works, Troy, N. Y., fire felt coverings used in new plant. Asbestosponge moulded covering used in school 175, Fordham, New York. Five felt sectional coverings used at Queens Borough Elec. Light and Power Co., Far Rockaway, N. Y., as well as at the Fair Haven & Westville R. R., New Haven, Conn., and Olympia Cotton Mills, Columbia, S. C. Asbestocel coverings also used in Willard's Hotel, Washington.

## HOW WE OVERCAME EXPANSION.

We had been in Bombay for over a week, and the "scaler boys" had been in the boilers every day from 7 a. m. to 6 p. m. The boilers on the passage out from London (thirty-four days) had been very "salt," owing to a leaky condenser. The deposit on the furnace crowns was in some places  $\frac{3}{8}$  inch thick, the wonder was that they had not come down.

I, as third engineer, had charge of the cleaning and overhauling of the boilers, and in order to fill the position with credit to myself, and honor to the United States, I took a course in Hindostanee profanity from the boss stevedore. A 2-foot length of 1-inch "Tuck's" packing, accompanied by "Jilde! Jilde! Calascaraa soor!!" eventually did the trick. The scalers finished, and our own men had to "sludge" out the boilers, so as to get rid of the scale and dirt that had dropped to the bottom.

The wash-down hose was attached to the donkey pump and put into the manholes on the boiler tops, and the loose scale was washed down to the bottoms. This in turn was raked out with the long fire rakes; but away at the back ends of the boilers was a pile of salt and dirt that the hose would not move or the rake reach, and one of the men had to go in.

Hanlon was a long, thin skeleton of a "Liverpool Irish buck," garrulous, witty and purblind with peering into the fierce heat of furnaces for many years, and so, because of his build, Hanlon was the man chosen. He stripped to the waist and in he went, cursing the fact that he was the skinny son of a skeleton father and an attenuated mother.

When all the dirt was out Hanlon started to get out, but the heat inside the boiler had swelled his body so that he could not get his shoulders through. He tried every conceivable way to get out—head first, feet first—but all to no purpose.

I tried to scare him out by telling him we would have to close up the boiler if he could not get out; then I tried to get him angry, so he would try to get out to have a slap at me, but all without success. At last he said in a very meek voice: "Mr. Silver" (the men never could get the hang of that name of mine), "Oi tink Oi cud git out if Oi hod a drap of the stuff in me." So I went aft and got a bottle of whiskey from the steward, took it down below and gave Hanlon a good stiff four fingers. "If you wud give me another of thim, Mr. Silver, Oi tink Oi cud git out, so Oi do."

This gave me an idea. I sized up the floor plates in front of the sludge hole, and, measuring with my eye how far I thought Hanlon could reach, I stood the bottle and glass on the plates just where I thought it would be out of his reach.

"Can't you have another try to get out?" He did, but without avail. I'll be back in a minute, Hanlon; the chief is calling me." I ran off up the engine-room ladder, round through the alleyway to the "fiddle grating" (which is the grating over the stokehold). From this point I could get a good view of the whiskey bottle, and waited. In a minute or so I saw Hanlon's head poked out of the sludge hole. In a moderately loud voice (so as not to bring me if too far away) he said: "Are yez there, Mr. Silver?" (No answer.) "He's lift the stuff; bad cess to him, Oi can't rache ut." And out came a long, skinny arm and swept the floor plates in an arc of a circle, but he could not "rache ut"; then the arm was withdrawn and a long Irish hind leg was pushed carefully toward the bottle; but I had sized up the distance too well, and all his attempts to reach it were abortive. Then followed a short valedictory address in pure Celtic, consigning me to the backwoods of Hades. This was concluded by a regular Battle of the Boyne, and Hanlon emerged head and shoulders through the sludge hole.

Just then the chief did call me, and I ran off to go over a long list of repairs. An hour or so after, I got below and on going into the stokehold found Hanlon (whom I had completely forgotten) lying, gloriously overjoyed, with his head pillowed on a bag of ashes, talking away to himself for all he was worth. From the trend of his monologue, he evidently did not know he was out of the boiler yet. As I entered (unnoticed by him) I overheard the following:

"Tim Hanlon, ye was borrun undher a lucky starr, me bye, so ye wor. Who wud ho t'ought thus marnin, when that shpindle-shankit Yankee thurrd (that was I) sez, 'Turrd to, ye black dogs o' firemen'—who wud a thought, Oi say, that Timothy, ma son, ye was pre-pre-fore-ordi-destinated to get sint into a biler full o' potyun (Celtic for whiskey). 'Come out,' sez he. Oi can't, sez Oi. Nor Oi won't, sez Oi; and h—l roast the fut Oi sturr out o' this biler, sez Oi, till the last drap's drank."—E. A. Suferkrop, in the American Machinist, New York & London.



## ELECTRIC LIGHTING FOR GERMAN SHIPS.

An article in the *Electrotechnische Zeitschrift* treats of electrical installations on new ships of the German navy:

"It appears that in the German services separate lead and return wires have been generally adopted, concentric cables being used in the neighborhood of the ships' compasses. Attempts to employ the ship's structure as a return have not attained successful results, and, so far as large vessels are concerned, this practice has been entirely superseded; but in the case of new torpedo boats, where economy in weight is a vital consideration, the practice still holds. In all places exposed to the danger of mechanical injury, such as the engine rooms and stock holds, lead-covered, iron-armored cables are employed, while elsewhere cables well insulated with rubber, but otherwise unprotected, except in some cases by thin rust-proof wire, are used. The wood casing formerly employed has been abolished, owing to its inflammability. Hitherto, the telegraph and telephone cables have been of the lead-covered, iron-armored type; but the newest ships have been provided with a central subway, like a corridor, as well as side corridors below the armored deck, which may be used for the electric cables, telegraph and telephone wires, etc., thereby avoiding all danger of mechanical injury to the same. It is proposed to dispense with the steel armor in the future, even for the lighting and power cables, retaining only the lead protection.

The practice of soldering branch connections has also been discarded in favor of branch fuse-boxes, in which the connections are made with terminal bars. These branch circuit boxes are made for two, three, four, six, and eight lamps. They are, of course, water-tight. Their introduction seems to have been a complete success, facilitating as they do systematic supervision of the ship's wiring.

Although slate is at present generally used for switchboard bases in the service, it is interesting to learn that iron is proposed as a substitute, owing to the unavoidable breakages which occur. Small machine boards with iron bases have already been successfully introduced, but the difficulty of insulating the terminals and connections has hitherto prevented the adoption of the plan on a large scale. With the exception of the connections with the measuring instruments, all the switchboard connections on the *Furst Bismarck* were for the first time made with bare copper bars, whereby a neat, solid construction is obtained, which is also accessible. The necessary protection against moisture is provided by enamel, which also serves to distinguish the poles, red and blue being used. This type of board is particularly advantageous where the available space is limited in depth, since the connections behind require no supervision, and the screw terminals may all be withdrawn from the front of the board."

Mr. Fritz Forster, in an article in the *Electrotechnischer Anzeiger*, discusses the use of accumulators for supplying electric light on ocean steamers. It appears that a German firm, which makes a specialty of ship installations, has recently installed, experimentally, quite a number of batteries of accumulators in Hamburg ships. All these ships previously possessed generating plants, the dynamos being either shunt or compound wound machines; but in each case they were designed to yield only the normal difference of potential required for the lighting, whence it was necessary to provide for charging the accumulators, subsequently introduced, in two parallel batteries, in order to avoid essential modifications of the existing plant. The accumulators, fitted with acid-tight covers of vulcanite, were placed in a compartment as near the switchboard as possible in each case and firmly secured. A diagram which accompanies the article shows the connections adopted to facilitate cutting out the compound winding of a dynamo when charging, so as to enable it to be run temporarily as a shunt-wound machine. As the writer suggests, experience alone can prove the adaptability of accumulators for ship-lighting purposes. But it is not impossible that they may play an important part in the future of this branch of electrical work, and they will be especially useful when a ship is in port and the boilers not under steam.

## HYDROGRAPHIC OFFICE NOTE.

Information has been received from the superintendent of the Chicago Ship Building Co., on Calumet river, South Chicago, giving dimensions of their dry dock as follows:

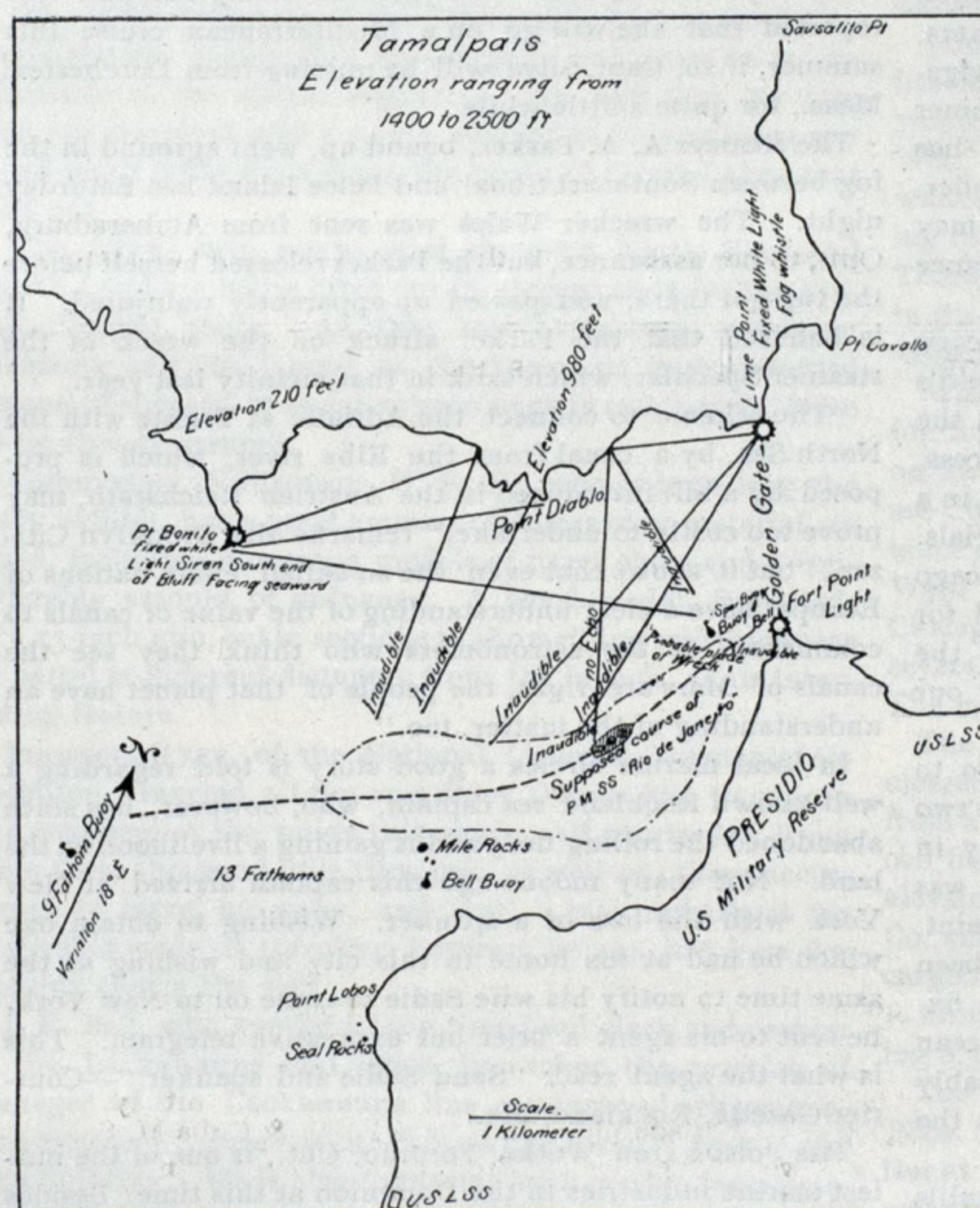
Length, extreme, 564 feet; length on blocks, 556 feet; width at top, 100 feet; width at bottom, 80 feet; width at gate, top, 70 feet; width at gate, bottom, 50 feet; available depth over sill, 16 feet.

## SHIPBUILDING AT NAGASAKI.

Consul Harris, of Nagasaki, February 9, 1901, reports the launching, on the 26th ultimo, of the steamship *Kaga Maru* from the Mitsu Bishi Dock Yard and Engine Works, of that city. This vessel was constructed under the shipbuilding encouragement act of the Japanese Government and Lloyd's rules, class 100, A1, and was built to the order of the Nippon Yusen Kaisha (Japan Mail Steamship Co.) for its American line. The materials used in its construction were purchased in England, and the keel was laid on the 20th of March, 1900. The ship is to be completed and delivered in March, 1901. A description follows: Type, 3 decks; material, steel; length over all, 459 feet; beam, 49 feet 2 inches; depth, 33 feet 6 inches; gross tonnage, 6,240 tons; displacement, 11,800 tons; draft, 25 feet; deadweight capacity, 6,820 tons; engines, twin screw, triple-expansion; boilers, cylindrical, four in number; indicated horse-power (estimated), 4,500; speed, 15 knots.

## MAGNETIC SURVEYS.

The United States Coast and Geodetic Survey has organized a special bureau charged with the magnetic survey of the whole country, including Alaska, the Hawaiian Islands and Porto Rico. Some 500 stations have already been



Showing the course of the steamer *City of Rio Janeiro* entering San Francisco harbor, also the lines of the inaudibility of sound from the fog signal stations, and the probable location of the spot where the steamer foundered.

occupied and the magnetic elements—declination, dip and intensity—have been determined. Other special stations have been established at which these observations will be reported from time to time, in order to determine the secular values of the elements. Magnetic observatories of a permanent character will be established at Cheltenham, Maryland (near Washington), at Sitka, in Alaska, and at Honolulu, on the Island of Hawaii. A new edition of tables and charts of the magnetic elements is in course of preparation, and the whole field of magnetic surveys will be covered within a reasonably short period.

PROFESSOR BILES an eminent English authority in marine architecture has stated as follows: Taking a steamer 500 ft. long, and 60 feet broad, with a draught of 27 ft. 6 in., he found that by increasing the length to 700 ft., with a proportionate increase in the breadth, but keeping the draught constant at 27 ft. 6 in., the cost of carrying a ton of cargo 5,000 knots at 12 knots speed increased from 8s. 6d. to over 11s. But if the draught, instead of being kept constant, was increased in proportion to the increase in the other dimensions, then the cost of carrying a ton of cargo the same distance, and at the same speed, decreased from 8s. 6d. in the case of the 500 ft. ship to 7s. in the case of the 700 ft. ship. It is thus shown that if draught be increased proportionately to increase of the other dimensions, cargo can be carried at a proportional less cost.

## THE BRITISH CONSIDER SUBSIDIZING SHIPPING.

The British House of Commons is considering the advisability of inaugurating a system of shipping subsidies. Mr. Evelyn Cecil pointed out that the Germans had established a fortnightly monthly service by the West Coast and East Coast of Africa, and also a monthly service which went as far as Delagoa Bay. The result had been that the German trade to East Africa had increased from £300,900 in 1891 to £955,600 in 1898, whereas our own trade to Pemba and Zanzibar had actually fallen off. The question of subsidies generally was a large and important one, and deserved to be fully considered, and he claimed that the recent establishment of the Direct West India Mail Service, with a bounty of £40,000 a year, afforded a precedent of giving help of this kind to our possessions abroad.

Sir E. Sassoon seconded the motion.

Sir F. Evans said that his firm had made a very close study of this question, and he could assure the hon. member that no line which went around the East Coast ports via the Mediterranean could be made a commercial success. His own company had tried for some years to establish a line via the southern route, but even in this case it could not pay, and after losing some thousands the company gave up the venture. He was personally very much opposed to subsidies unless it could be clearly shown that the government got very good value, and it could certainly be shown that any useful advantage would be gained by this country supporting a line to the East Coast of Africa via the Mediterranean.

Sir C. Cayzer and Mr. Arthur Stanley supported the demand for a Select Committee on the whole subject.

Mr. C. M'Arthur said that within the last five years the subsidy system had enormously increased with foreign Governments greatly to the detriment of British shipowners. Figures which had lately been prepared worked out as follows: Great Britain, postal subsidies, 1895 £592,000, 1900 £764,000; United States, from £167,000 to £357,000; Germany, from £249,000 to £389,000; Italy, from £70,000 to £449,000; France, from £420,000 to £1,766,000. There was a bill now before Congress to enormously increase American subsidies, and British owners in some trades trembled at the possible result of the passage of such an act. The Norddeutscher Lloyd received £279,000, the International Navigation Company of America £168,000 a year, the Trans-Atlantique Company of France £446,000 a year, and the Messageries Maritime Company £554,000 a year, compared with £126,000 paid to the Cunard and White Star Companies put together. He strongly supported the demand for a Select Committee.

Mr. G. Balfour agreed to appoint a Select Committee to inquire into the general question of shipping subsidies. The Government had at present under its consideration the question of paying a subsidy to a steamship company which should establish a line between this country and Zanzibar. It must be remembered, however, that in giving money in this way the Government had in view not the promotion of trade and commerce generally, but the furthering of the interests of particular colonies.

The motion was then withdrawn as a whole, and the proposition of Mr. Balfour being accepted, that part of the motion asking for a committee on the subsidy system was carried.

## IMPORTANT SALVAGE EXPEDITION.

An important salvage expedition has left the Clyde for the West Indies, where an attempt will be made to lift the *Corinthia*, lost on the Island of St. Domingo last year. She was on a voyage from New Orleans to the Cape of Good Hope with a cargo of one thousand mules for the British Government. The underwriters paid the whole claim of \$35,000, but as she was worth at least double that sum a fund of £8,000 to £10,000 has been subscribed with the view of floating her. Accordingly the Liverpool-owned steamer *Bear* has been chartered to convey the salvage party of forty men and divers to the scene of the wreck. The *Bear* takes out the most approved steam pumps and other salving appliances, and those behind the expedition are confident of reaping a big profit on the venture. The risk is extensively covered in Glasgow, London and Liverpool.



## THE LAW OF MAGNETISM.

### A SHORT AND CONCISE LESSON ON MAGNETISM AS IT AFFECTS THE MARINER'S COMPASS.

BY CLARENCE E. LONG, MILWAUKEE.

(Arranged for Masters and Pilots on the Great Lakes.)

#### CHAPTER V.

#### THE DIFFERENT KINDS OF DEVIATION, THEIR CAUSES, AND HOW TO COMPENSATE EACH.

Semi-circular deviation, so-called because both of its phases occur in opposite semi-circles; for instance, if the deviation is easterly on north it will be westerly on south, and vice versa; and if easterly on west it will be westerly on east, and vice versa. Semi-circular deviation is caused by the sub-permanent magnetism in the ship and by the induced magnetism in vertical iron. The Permanent portion of the ship's magnetism which causes Semi-circular or Polar Deviation, is compensated by steel magnets, whose magnetism is likewise permanent; and that portion due to induction in vertical iron, which goes and comes with change of latitude, and likewise causes semi-circular deviation, is compensated by vertical bars of ordinary wrought iron, which similarly become magnetic by terrestrial induction, and are influenced in a corresponding degree by such changes of latitude as both may be exposed to.

The principles are identically the same as in the case of the athwartship magnet.

QUADRANTAL DEVIATION, so called, because all of its phases occur in the four quadrants of the compass, namely, NE., SE., SW., and NW. Quadrantal deviation is caused by the transient or inductive magnetism of horizontal soft iron, such as iron deckbeams, the iron spindle of a wheel, etc. It is nothing with the ship's head north, south, east and west, and greatest on the quadrantal points. It is generally easterly in the NE. and SW. quadrants, and westerly in the NW. and SE. quadrants of the compass. Quadrantal deviation remains unchanged in all magnetic latitudes, and provided that the iron in the ship be of good quality, the quadrantal deviation will be little if at all altered by lapse of time.

#### TO CORRECT THE QUADRANTAL DEVIATION.

The semi-circular deviation having been adjusted as near as possible, the quadrantal deviation is compensated by soft iron generally in one or other of three forms, namely: Horizontal cylinders, like clock weights, globes, like the round shot of Nelson's time, or masses of small, close-linked iron jack chain. This last is a chain enclosed in brass boxes and placed generally athwartships of the compass.

When the quadrantal correctors are placed athwartships, in either of the three forms above named, they correct for easterly deviation in the NE. and SW. quadrants and west-

to the compass has red polarity and attracts the south end of the compass needle. In this position they both correct for easterly deviation, one assisting the other. Heading SW. these correctors would have the same effect; but on heading the vessel NW., their starboard ends require red magnetism and compensate westerly deviation. They would also compensate westerly deviation when heading SE.

These correctors are too frequently absent, and it should be remembered that they very essentially improve the action of the compass, not only diminishing the deviation but increasing the directive force. As already stated, these correctors, being composed of soft iron, readily become magnetized by induction from the earth's force. So long as the ship is upright, these globes are inoperative on north and south courses (where the Heeling Error amounts to the most), but when she heels over the lower part of the corrector on the weather side of the ship is raised approximately to the level of the compass needles, and having red polarity helps to neutralize the blue polarity of the side of the ship. In this it is assisted by the blue polarity of the upper half of the lee corrector.

HEELING ERROR DUE TO MAGNETIC FORCE BELOW THE COMPASS. Heeling changes the position of the iron in the ship and what was before horizontal now inclines towards the vertical position. In north magnetic latitude, the upper or weather ends of athwartship iron beams draw the north end of the needle to windward. The position of the vertical iron is also changed, producing a corresponding change of deviation. Heeling error, as a rule, throws a vessel to windward on northerly courses and to leeward on southerly courses. The heeling error is greatest on northerly and southerly courses, and the least on east and west courses.

#### ADVANTAGE OF HEELING ERROR COMPENSATION.

It is very essential that the Heeling Error be compensated. To show the advantage a vessel has whose heeling error is adjusted over another where it is not so, just suppose them to be on northerly or southerly courses in a rough beam sea. In the one case, each time the ship rolls, the vertical magnetic force below the compass will come out now on one side of the needle, and now on another, causing the card to be alternately pulled to starboard and port at every roll; and should this pull happen to coincide with the period of vibration due to the motion of the ship, the swing of the card will be so great as to render it perfectly useless. In such cases a man ignorant of the science of compass adjustment will be almost certain to attribute the excessive swing to some inherent fault of the compass, and inwardly curse the maker. On the other hand, the properly adjusted compass will remain comparatively steady under all circumstances, and, any little swing will be due to purely mechanical causes. It has already been shown that the Quadrantal Correctors help to correct the whole of it; and likewise, another small constituent of the Heeling Error is corrected by the Flinder's-bar. From the foregoing, the ship-master will see how necessary it is that the Semicircular magnetism, causing the deviation on east and west, should be resolved into its constituent parts and each compensated by the means suitable to it.

Enough has been said to convince even the most skeptical that it is absolutely necessary to understand the laws of magnetism before compass adjustment can be understood, let alone undertaken. It is not necessary that a shipmaster, whose experience is limited to the new vessels he commands and whose duty to his owners calls for as many trips as possible during the season of navigation, should be able to adjust his own compass, but he should understand the laws of magnetism and the theory of the science so that when he employs an adjuster he knows whether the adjuster is doing the work according to the laws upon which it is based. A shipmaster should also be familiar with the Azimuth work so that he can ascertain the deviation of his compass at any time of the day or night. No matter how correctly a compass may be adjusted, it will only remain so for a limited time; it requires only a short interval of time, vibrations, shocks, or strains to change the magnetic force in the vessel so as to make the compass point incorrectly.

(To be continued.)

#### TOLEDO FUELING DOCKS.

Stanley B. Smith & Co. of Detroit apparently intend invading the Toledo field and for this purpose have secured two fuel docks on the Maumee river, one at the Ohio Central Railroad Co.'s dock on the east side, and the other on the Hocking Valley dock on the west side of the river.

## UNITED STATES MONTHLY SHIPBUILDING RETURNS.

TREASURY DEPARTMENT,  
OFFICE OF THE COMMISSIONER OF NAVIGATION.

The Bureau of Navigation reports 128 vessels of 63,159 gross tons were built in the United States and officially numbered during the month of April, 1901, as follows:

	WOOD.				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.		No.	Gross.
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.		
Atlantic and Gulf.....	33	5,472	30	1,695	.....	.....	5	13,998	68	21,165
Pacific.....	10	3,077	21	1,098	.....	.....	1	23	32	4,198
Great Lakes.....	.....	.....	3	1,570	2	4,558	9	30,324	14	36,452
Western Rivers.....	4	70	10	1,274	.....	.....	.....	.....	14	1,344
Total.....	47	8,619	64	5,637	2	4,558	15	44,345	128	63,159

The largest steel steam vessels included in the figures are:

NAME.	GROSS TONS.	WHERE BUILT.	OWNER.
Irevonian.....	5,597	Chester, Pa.	American-Hawaiian S.S. Co.
Venus.....	3,719	Lorain, Ohio.	American Ship Building Co.
Jupiter.....	3,719	.....	.....
William L. Brown.....	4,998	Chicago, Ill.	Federal Steam Ship Co.
Randolph S. Warner.....	3,062	West Superior, Wis.	Superior Ship Building Co.
G. A. Flag.....	3,062	.....	.....
Mars.....	3,748	Wyandotte, Mich.	Detroit " " "
David M. Whitney.....	4,626	.....	David C. Whitney.
Esperanza.....	4,702	Philadelphia, Pa.	N. Y. & Cuba M. S. Co.

The foregoing figures do not include craft without motive power of their own. From other sources than construction one vessel of 622 gross tons was added to the merchant fleet, as follows:

RIG.	NAME.	GROSS TONS.	WHY OFFICIALLY NUMBERED.
Bark.....	Hindoo	622	Foreign Wreck.

The bar magnet placed athwartship, with its center in the fore-and-aft line and exactly at right angles to the compass needle, adjusts for the deviation on north and on south. If the deviation had been westerly on north it would be easterly on south, and the magnet so placed as to correct the deviation on north would also correct for the opposite deviation on south and for the same amount when the vessel comes to head south. The present system of compass compensation presupposes the attraction causing deviation to be equal on north and south, but in a majority of cases the attraction is unequal, due to more iron placed on one side of the compass than on the other. Supposing the case of a vessel having, say, one point of easterly deviation on north and on south only one-half a point westerly deviation. Now, it is plainly to be seen that if we adjust for the one point of deviation on north it corrects also for one point on south, but as there was only one-half a point on south in the first place, by adjusting for one point introduces an error of one-half a point on south, while north is correct. If we adjusted for the half point on south, then this would leave a half a point on north. The only thing to do in a case of this kind is to halve the error, that is, split it, leaving as much on one point as on the other point.

The bar magnet placed fore-and-aft with its center in the athwartship line corrects for the deviation on east and west.

erly deviation in the NW. and SE. quadrants. Now, it is the earth's magnetism that makes magnets out of these soft iron correctors by induction, and it all depends in which position they are relative to the magnet meridian. When the vessel heads either north or south correct magnetic these correctors are non-magnetic, for the reason that they are at right angles to the magnetic meridian or earth's horizontal force and therefore powerless to affect the compass. When the vessel heads east or west correct magnetic the soft iron correctors, being in line with the magnetic meridian, are rendered strong magnets, but they cannot affect the compass as their poles are in line, or parallel, with the needles of the compass; but instead, they give the compass needles just that much more directive force.

Now, reason out how these correctors effect their purpose and which end is north polarity and which end is south polarity. With the ship's head NE., the port ends have red or north magnetism. Why? Because those ends are pointing towards north, and being soft iron become readily magnetized, but opposite in name from the magnetism of the north magnetic pole of the earth, which has south polarity. The starboard ends then must have blue polarity. The end of the corrector on the port-hand side next to the compass has blue polarity and attracts the north end of the compass needle. The end of the corrector on the starboard side next





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CLEVELAND, O., MAY 9, 1901.

## LAKE NAVIGATION RESUMED MAY 8.

THAT 2nd mates', No. 2 branch pilots' assistants' duties  
 are not yet defined. Let's hear the news from Babylon.

AFTER an ice blockade in St. Clair river lasting for 22 days,  
 navigation opened on Wednesday, May 8th. Loss on traffic  
 estimated at \$3,000,000.

EVERY maritime power in the world, including the United  
 States, even Mexico and Brazil, have tonnage building in  
 the United Kingdom to their account.

A PHILOSOPHICAL sort of an irrepressible once said, "It's  
 an ill wind that blows nobody good." The ice jam in the  
 St. Clair river helped the fuel docks out nobly.

THIS talk of lake-built or any other steamers going around  
 Cape Horn when the regular route is through the Straits of  
 Magellan is misleading. These coaches never see Cape  
 Horn.

JUDGING from the report of vessels under construction in  
 the United Kingdom, the greatest number seem to favor  
 vessels of 3,000 to 5,000 tons. The next most marked charac-  
 teristic is for steamers of 10,000 tons and over.

THE RECORD is not furnishing the means these times for  
 a U. S. Supervising Inspector of Steamboats to make news-  
 paper reporters out of his local inspectors. We have too  
 much regard for the latter, and, incidentally, the RECORD.

NOW that J. Pierpont Morgan and associated syndicates  
 intend handling a fleet of steamers built, sailed and sailing  
 under the British flag, it will be more interesting than ever  
 to watch marine legislation in the next session of Congress.

BRITISH capital has been flowing into the United States  
 in such a regular stream, syndicating and monopolizing so  
 many of the most productive industries, that it is about  
 time the current changed, that is, became Morganized, as it  
 were.

THE original Bibby Line owned in Liverpool, afterward  
 secured by one of their energetic clerks named Frederick  
 Leyland, and later consolidated with other fleets, is now to  
 be owned and controlled by Americans. Well! if there was  
 a nickel to be made out of floating property, the Leylands  
 from father to son could rake it in, and we can only hope  
 that the new owners will go and do likewise, less the half  
 century experience of the Bibby-Leylands—Furness-Wilson  
 people.

THERE is little use in stirring up dead men's bones, unless  
 it is to delay the accumulation, yet, we can not but rise to  
 inquire, (for the fellows themselves can't) whether the 130  
 lives lost in the Rio Janeiro foundering case were not rushed  
 into eternity quicker than they ought to have been. When  
 the big boat is ready to make a hole in the water the little  
 boats are not infrequently called into use, and generally to  
 good purpose. It occurs to us that perhaps these little life  
 boats are not all that could be desired for life-saving pur-  
 poses. Now that vessels are compelled to carry metal life-  
 boats it should be determined whether they save or take life,  
 to be so named. In this connection we have also in view  
 the fate of the crews of the late lake steamers Western  
 Reserve and Gilcher, both having metal life-boats, but no  
 lives saved.

IDEAS must surely have changed lately regarding sailing  
 in the vicinity of field or drift ice. Formerly, every effort  
 was put forth to keep clear of getting jammed, but the St.  
 Clair river experience of the past few weeks would tend to  
 show that the notion now is to rush clean into limbo or  
 trouble, that is, to place craft where they are out of control.  
 There was at all times clear water in Lake Huron and ves-  
 sels ought to have been kept where they would remain afloat  
 and under command, instead of which, fleet after fleet piled  
 themselves up in the river and allowed the ice to take charge  
 at every little break. The new way may be a good way,  
 but it's an expensively lubberly one, all things considered.

HON. O. P. Austin, principal of the United States Bureau  
 of Statistics, favors chartering a fleet of vessels and convert-  
 ing them into an around-the-world floating exposition. If  
 our so paternal government (in some things) would only ap-  
 propriate the funds to build a modern Great Eastern, exhib-  
 itors might be tempted to ship, insure and display their  
 wares on the basis that the first stock sold out should cease  
 further payments of expenses on the whole, or remainder of  
 the exhibits, or, or, or, but no, we can't solve it even after  
 getting the craft built, donated and afloat.

APROPOS of the various strandings which occur on the  
 opening of navigation each season, much must be credited  
 to the entire neglect of, or faulty adjustment of compasses.  
 In moving over the ground in thick weather the compass  
 alone has to be depended upon (assisted of course by the  
 lead) and if it indicates incorrectly trouble is liable to en-  
 sue. In clear weather a lookout can be kept so as to see  
 that she doesn't bounce on anything visible.

IT HAS been pointed out that the large industrial and com-  
 mercial syndicates lean particularly and markedly towards  
 placing young men in high positions. This is all right enough  
 and just as it should be in executive departments, but, it  
 may be depended upon that there is some sage, aged wisdom  
 luffing around somewhere to see that the juvenile fleet keep  
 their ballast aboard all right. The old trite saying is a true  
 text to-day as ever, "you can't put old heads on young  
 shoulders."

MR. J. Pierpont Morgan may not be considered such a  
 very patriotic American after all. He has positively taken  
 the lead in purchasing, presumably, with good American  
 dollars, a foreign fleet of cargo boats, to be sailed by foreign-  
 ers and under their flag. They are usually well-built tanks,  
 too, and won't require much overhauling and repairs for our  
 yards and shops to work upon.

GRAIN is crowding up to an alarming extent at lake ports  
 on account of the ice blockade in St. Clair river. Chicago  
 shows this week a total of nearly 21 million bushels, half of  
 which is wheat, and Duluth over 17 million bushels, 10 mil-  
 lion of which is wheat.

THE very commendable contest or commercial rivalry be-  
 tween Montreal and Quebec, relative to which is to become  
 the national port, is full of interest from a shipping stand-  
 point. Few persons, however, would consider the claims of  
 Sarnia, Ont., as a candidate for these commercial successes  
 as an entrepot for Dominion and trans-Continental traffic.

IN forming monopolies it appears that it is not necessary  
 to control each and every avenue of trade, commerce or trans-  
 portation, just get the major portion in hand and make the  
 balance or remainder come to time, that's the way the fiddle  
 is played.

IN the whole chain of the U. S. Treasury Department  
 about the weakest link we run across is found in the stud  
 of the link centered in the head of the Steamboat Inspection  
 Service. Give us a capable, progressive leader in lieu of a  
 fossilized political mountebank and a horde of vacillating  
 satellites as unstable as their job god.

THE recent decision of Judge Seamen in the United States  
 Court at Milwaukee whereby a crew was not permitted to  
 collect salvage in a case of stranding, is a just, equitable and  
 technically righteous verdict universally upheld and ac-  
 cording to international custom and practice. We heartily  
 commend the court's decision on this much prevalent local  
 error regarding a crew's services.

NOT a word can be uttered derogatory to the rights and  
 wisdom of forming unions. All interests may work in uni-  
 son and harmony when properly united. We are credibly  
 informed that it was first tried and threshed out to an issue,  
 or several of them, in the Eden garden.

## A STEAMBOAT IN CHANCERY

Judge Carr, of the chancery court of the thirty-sixth judi-  
 cial district, rendered his decision in the case started by the  
 H. W. Williams Transportation Co. South Haven, Mich., ver-  
 sus the Darius Cole Transportation Co. Detroit. The Darius  
 Cole was sold to the Williams Co. in 1899 for \$125,000. She  
 made 15 miles an hour on the Detroit river route as one of the  
 Star-Cole Line steamers and was purchased for a 15-mile  
 boat. The Williams Company claimed she would not make  
 the time in Lake Michigan and refused to pay the balance  
 due on the purchase price, \$50,000. They began action  
 against A. R. Lee, manager of the Cole estate, to force the  
 estate to pay back the money already paid on the contract,  
 \$75,000.

The opinion has been filed by which the contract of sale  
 is rescinded, the defendant decreed to take back the boat  
 Darius Cole, repay the \$75,000 with interest, cancel the note  
 for the \$50,000 not paid, and discharge the mortgage. De-  
 fendant is also ordered to pay complainant the insurance and  
 taxes paid, amounting to \$2,693. Complainant's claim of  
 \$2,000 for advertising is disallowed. The basis of the de-  
 cision is a breach of an alleged warranty on the part of the  
 defendant that the steamer Darius Cole would make 15 miles  
 an hour between South Haven and Chicago in the excursion  
 business.

James H. Campbell, Esq., of Grand Rapids, and C. E.  
 Kremer, Esq., of Chicago, represented the complainants and  
 F. C. Harvey Esq., and ex-Judge Speed of Detroit represent-  
 ed the defendant.

Attorney Harvey stated that it had been stipulated at the  
 beginning of the trial that the case should be appealed, as he  
 took exceptions to the case being handled in a court of  
 chancery. He held that the case should have been tried in  
 a court of law. The entire testimony will be prepared and  
 taken to the supreme court for review. This means the loss  
 of the entire season's earnings of the boat.

## METEOROLOGICAL NOTES.

W. A. Stewart, recorder of weather reports at the Observa-  
 tory, at Toronto, Ont., has been presented with a gold-headed  
 cane by his observatory friends in recognition of his 50  
 years' services, which began in May, 1851. He states that  
 the records show practically the same weather during the  
 past decade as during the first ten years of his tenure of the  
 position.

Mr. Stupart, Director of the Observatory of the Dominion  
 of Canada is about to publish a statement which will practi-  
 cally be a weather forecast for the coming year. It will be  
 based on the sun-spot theory. As the present is the period  
 of minimum sun spots, the next 12 months are expected to  
 bring lots of rain. Sir Norman Lockyer believes this theory  
 will prove scientific, and will result in enabling the Govern-  
 ment of India to foretell and provide against drought and  
 consequent famine years.

## AN ELECTRIC CANAL POWER.

The increase of capital stock of the Miami and Erie Canal  
 Transportation Co. from \$10,000 to \$3,000,000 means the  
 consummation of the project to operate the Miami and Erie  
 canal, extending from Cincinnati to Toledo by electricity.  
 a track is to be built along the canal and the boats will be  
 towed by electric motors. Experiments with the system de-  
 monstrated its feasibility, and the State Board of Public  
 Works has entered into a contract with the company, giving  
 it permission to operate over the entire length of the canal.



## CANADIAN CANALS.

John J. Bittinger, the United States Consul General, stationed at Montreal, has sent to the State Department an exhaustive report on the waterways of Canada.

He says their waterways are unrivaled by length and in service to commerce.

"From the point where the waters of Canada mingle with those of the Atlantic," says Mr. Bittinger, "to a Canadian port at the head of Lake Superior, along the entire course of which a vessel may sail in Canadian waters, the distance is 2,260 statute miles. From the Straits of Belle Isle to Montreal, the St. Lawrence river extends 986 miles, with a channel wide enough for ocean steamers.

From Lake Superior to Three Rivers on the St. Lawrence, where tidal influence ceases, a few hours sail from Montreal, there is a drop in level to the extent of 600 feet; that is, a vessel from Montreal on its voyage to Port Arthur has to ascend 600 feet.

"To attain this height there is a system of locks in operation by means of which vessels are lifted 551 feet, leaving 49 feet to overcome by working against a downward stream, which at one place near Iroquois often necessitates the employment of a tug to help a steamer up the river."

Referring to the canals between Kingston and Montreal the consul general says:

"The width of the locks is 45 feet and depth of water on the sills 14 feet. On their course down from Kingston to Montreal, several of the canals are not used, as the rapids can be run with safety; From Kingston, the course west is through Lake Ontario until Port Dalhousie is reached, where the Welland canal is entered.

"This splendid construction extends 26¾ miles; the total lift is 326¾ feet, which is effected by 27 locks, each 270 feet by 45 feet, with a depth of 14 feet. From the end of the Welland canal—Port Colborne—there is deep water to Sault canal 394 miles.

"The Sault Ste. Marie canal extends 5,967 feet; it has only one lock, which is 900 feet by 60 feet, and lowest depth 20 feet 3 inches, the total rise being 18 feet.

Another water course runs from Montreal to Ottawa and turns down to Kingston, a total distance of 245 miles.

"The rivers Ottawa and Rideau are part of this waterway. The canals on this route are: Lachine, 8½ miles; St. Anne's lock and piers, one-eighth of a mile; Carillon canal, three-fourths of a mile; Grenville, 5¾ miles. From Ottawa to Kingston—126¼ miles—there are thirty-five locks. Besides these main line canals there are others, one the line of the Richelieu river; in Ontario, through the Petersborough district; in Cape Breton; and a number of branches acting as feeders to the Rideau and Welland systems.

## THE COAST SHIPYARDS COMBINED.

A circular has been issued by H. W. Poor & Co., regarding the organization of the United States Ship Building Co., under the laws of New Jersey to acquire the Newport News Ship Building & Dry Dock Co., the Union Iron Works, the Bath Iron Works, limited, the Hyde Windlass Co., of Maine and the Canada Mfg. Co., of Carteret, N. J.

The following have consented to serve on the board of directors: Henry M. Scott, Union Iron Works; Lewis Nixon, Crescent Ship Yards; Charles A. Canda, John S. Hyde, president of the Hyde Windlass Co.; E. W. Hyde, president of the Bath Iron Works, limited; C. B. Cutler, Newport News Ship Building & Dry Dock Co.; H. E. Huntington, first vice president of the Southern Pacific Co.; Irving M. Scott, vice president and general manager of the Union Iron Works; Edwin D. Haly, Minneapolis & St. Louis Railroad Co.; E. H. Harriman, chairman of the board and James Stillman, president of the National City Bank. Other directors will be named after the company is instituted.

The aggregate for orders now in the hands of the constituent companies amounts to \$60,000,000. The company will be authorized under its charter to issue capital stock as follows: Preferred stock (7 per cent. non-cumulative), \$32,500,000; common stock \$32,500,000.

The plan will become operative as soon as organizers notify the Mercantile Trust Co., as depository, that the corporation has acquired the properties of the constituent companies.

MR. H. F. J. PORTER, formerly manager of the Chicago office of the Bethlehem Steel Co., and more recently located at the works at South Bethlehem, has been appointed New York sales agent of the company, with headquarters at 100 Broadway. Mr. Porter is well and favorable known to the majority of vessel owners and other lake marine interests.

## LAUNCH OF THE LYRA.

The steel steamer Lyra, built by the Maryland Steel Co., Sparrows Point, Md., to the order of the Boston Towboat Co., Boston, Mass., was successfully launched on Wednesday last, April 30.

The Lyra is a sister ship to the Pleiades and the Hyades, recently built at the yards for the same owners. Her general hull dimensions, build and equipment are as follows:

Length over all, 350 feet; keel, 330½ feet; beam, 47 feet; depth, 28 feet; depth to shelter deck, 35½ feet; water bottom, 40 inches with a capacity of 1,000 tons; bunker capacity, 650 tons; dead weight ability, 6,350 tons; draft loaded, 24½ feet.

The Lyra has 7 hatches, 5 steam winches and the Williamson steam steering gear. The hull is built of mild steel, 3 complete steel decks, 6 water-tight bulkheads, one non-water-tight bulkhead. Engines are single-screw, triple expansion; cylinders, 21", 35", 56" diameters; all 42" stroke for 175 lbs. steam pressure; 100 revolutions. The boilers are 2 single ended, each 14½ feet in diameter by 10¾ feet in length for 175 lbs. pressure. Pumps are independent feed, bilge, circulating, fire and sanitary of Worthington make. She is fitted with 2 masts, 10 booms, two derrick masts, 2 metallic life boats and 1 cedar dinghey, anchors, cable chains, warps, etc. to the requirements of the American Bureau of Shipping, New York.

## ST. LAWRENCE IMPROVEMENTS.

The Canadian Government is taking active steps to improve the waterways and seaports of the Dominion. The St. Lawrence route is receiving much attention and discussion, both in Parliament and in the daily press. There is a unanimous feeling that the increased demands of modern shipping must be met with deeper and larger channels, and a more perfect system of lights and buoys, and large appropriations have been voted. About twelve years ago, the St. Lawrence ship canal was completed to a depth of 27 feet at low water and a minimum width of 300 feet, from Montreal to the sea.

It is now being deepened to 30 feet, and widened to 450 feet, and there is a talk of 35 feet, and 600 feet. The total length of dredged channel is about 50 miles. The work is mostly done by the Government, and they are now adding several large, high-powered modern dredges to their fleet, and remodeling the Government shipyard at Sorel, Que., by the addition of steel buildings and new tools.

This is mainly due to the progressive policy of Mr. Tarte, the Minister of Public Works, and these additions are being made under the engineering guidance of Mr. A. W. Robinson, M. Am. Soc. C. E., Montreal.

Two large steel-hulled dredges are now being built from Mr. Robinson's designs; one for British Columbia, and the other for the St. Lawrence. Mr. Robinson has also been commissioned to examine the seaport channels in Nova Scotia and New Brunswick with a view of designing a large self propelling dredge to suit the condition there existing.

## MORE PROSPERITY FOR SAULT STE. MARIE.

Detroit dispatches tell of the conference in that city between Alfred R. Harvey, of Liverpool, representing English capital, and F. H. Clergue, of the Lake Superior Power Co., and announce the probable formation of the International Steel, Iron & Pipe Co., with \$50,000,000 capital, for the erection of steel works at both the Michigan and the Ontario Sault Ste. Marie. This, taken in connection with the amendment of the charter of the Consolidated Lake Superior Co. by the Connecticut legislature, so as to permit the company to operate vessels and railroads, in addition to the original powers granted it, seems to point to an enlargement of the original plans of the Clergue syndicate in the matter of iron and steel manufacture. The company secured a special charter from Connecticut in 1897, with capital of \$20,000,000. Referring to the steel plant now building at the Sault, Mr. Harvey said at Detroit: "We are so far advanced that part of the mill will be running inside of six months, and the entire plant within a year and a half. Then we shall employ 10,000 men at least. It is our intention to have mills on both sides of the Sault river, in the United States and Canada. Much of our best machinery has been ordered and is either building or ready for shipment in England. From the ore which comes to us from the Lake Superior mines we will turn out castings, rails, structural and bridge iron."

Mr. Clergue, however, has given it out that it should be distinctly understood that his syndicate is by no means fathering the Harvey projects as matters now stand.

## SHIPPING FACILITIES AT ESCANABA.

The Chicago, Milwaukee & St. Paul road will this year engage in the transportation and shipping of iron ore as it never has done before. In preparation for this new business the company has completed near Escanaba one of the largest and most convenient ore dock systems to be found anywhere on the chain of lakes, and during the past winter the company has turned out hundreds of ore cars to meet this new kind of traffic.

The company's ore dock near Escanaba has recently been completed, and a large coal dock is now being built there, which will complete the arrangements by the Milwaukee road for handling the ore business and receiving coal from lake vessels.

The new ore dock is of modern design and perfect workmanship, and in point of capacity and with respect to engineering work involved, the plant will compare favorably with the most noted structures of this kind on the chain of lakes. This dock has been built to handle the iron ore for the Milwaukee company, which will be delivered to it over the company's new line, known as the Escanaba & Lake Superior road, which runs from Channing to Escanaba. The dock proper is 750 feet in length, 52 feet wide at the top, and 59 feet wide out to fender rails. It rises 66½ feet above the water line. It has 120 ore pockets, with a capacity of 250 tons each, or a total ore capacity of 30,000 tons. The length of the pile protection is 4,810 feet, and the pile and timber trestle approach extend 2,760 feet.

## PILOTING IN THE ST. LAWRENCE.

STILL SOME WORK TO BE DONE TO MAKE A SAFE 14 FOOT CHANNEL.

In a letter to the MARINE RECORD, Capt. Thos. Donnelly, Kingston, Ont., Chief Inspector for the Canadian Lake Underwriters' Association (Inland Lloyds), says:

"As regards the new Chicago steamers, I have not seen them yet, but I have seen the plans, and I think they are fine vessels, but there are several points in the river that want attending to, before these steamers can be a success. In this connection I am very glad to state that the Government ordered contractors to commence very early this season to remove spots in the river, that I called attention to last season. The dredges are now working at Cardinal and Sparrow Hawk Point, and inside of ten days, these two places will be navigable for vessels drawing 14 feet. There are a few more places, that need attention. The outer pier at the Guard Lock at Cardinal wants extending a few hundred feet. The embankment protection pier at the west end of the North Channel Cut below Prescott should be extended at least 500 feet westward, and the openings in this same pier filled in, before it can be a success.

During the past week, the barge Valencia stranded in this cut, owing to the fact, that the current sweeps through the west embankment, causing the vessels using this cut to sheer very badly. Last fall the barge Alice with a cargo of grain struck from the same cause, at the same place. I feel certain our Government is alive to the situation now, if it is not too late, and that these matters in the river will have attention. There should also be a general cleaning up of the new cuttings in the channel.

## EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, report the condition of the eastern freight market as follows:

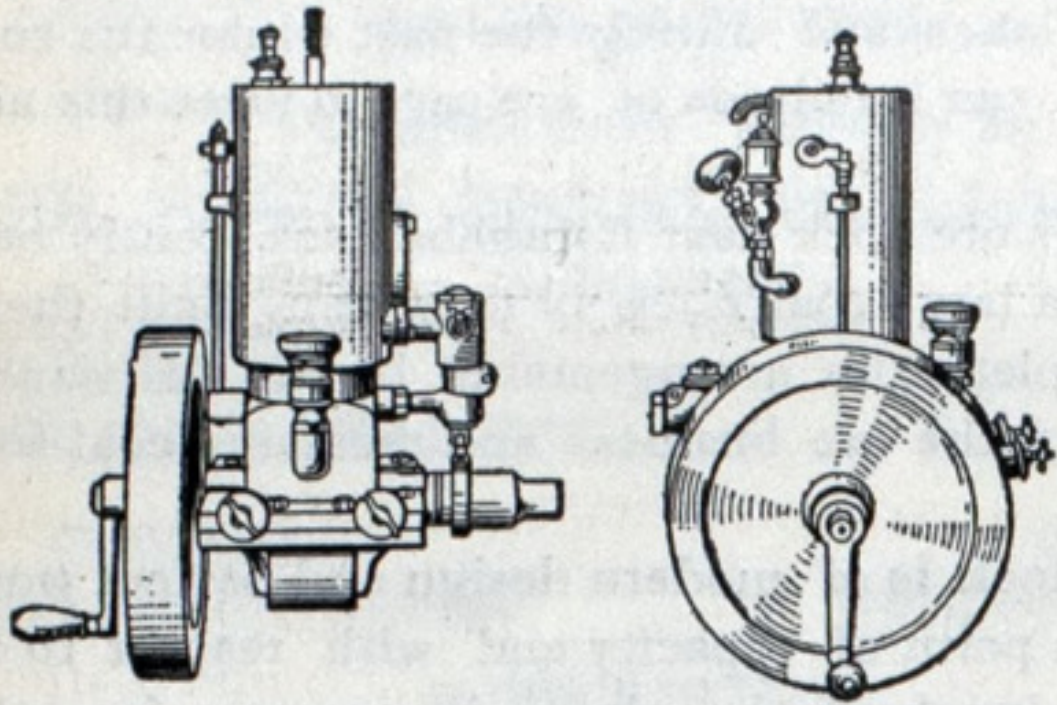
The freight market generally whilst showing a little more activity in the amount of business transacted, is not characterized by any material advance in rates. The fixtures reported for grain have increased, as compared with those effected during last week and the rates obtained show a slight improvement over those previously paid. Quite a little business has been done in charters from the British Provinces for deals and in sympathy with other markets, the rates paid show a slight advance. The supply of available tonnage from the Atlantic ports is being gradually reduced, and whilst there is no special demand in any particular direction, the present indications point to a better market. We have no further transactions to report for the carrying of coal to the Mediterranean ports, but there is an increased inquiry for tonnage in the direction of the River Plate, whence, we understand, there is likely to be a demand for tonnage to load grain. An increased volume of business has been done in time charters, but the fixtures effected are mostly for special trades, and in some cases have simply been renewals of previous charters.

In regard to sail tonnage, we can only report a slightly greater activity in case oil charters to the far East at about former rates, otherwise the market shows no signs of improvement.



## Truscott

VAPOR MARINE MOTORS.  
HIGH GRADE PLEASURE CRAFT.



TRUSCOTT BOAT MFG. CO.  
ST. JOSEPH, MICH.

SEND 5 STAMPS FOR CATALOG.

## Pintsch Gas Lighted Buoys.

Adopted by the English, German, French, Russian, Italian and United States Light-House Departments for channel and harbor lighting. Over 1,000 gas buoys and gas beacons in service.

## Burn Continuously

from 80 to 365 days and nights  
without attention, and can be seen  
a distance of six miles. . . . .

Controlled by

**THE SAFETY CAR HEATING AND LIGHTING CO.**

160 Broadway, New York City.

### BASCULE BRIDGES IN CHICAGO RIVER.

In removing the obstructions to navigation and the flow of water through the Chicago river, the trustees of the Sanitary District of Chicago, who have this problem in charge, are pushing their work vigorously and as rapidly as the many obstacles to be overcome will permit. The first and probably the most important part of the work consists in the ultimate removal of the center-pier swing bridges. The swing bridge at Taylor street has been entirely removed and replaced by a Scherzer rolling lift bridge, recently completed. The specially obstructive railroad bridge which is near the Taylor street bridge will be removed within a few months, as the new double-track Scherzer rolling lift bridge of 275 feet movable span will soon be completed and placed in service. Contracts have been awarded and work has commenced upon the new Scherzer rolling lift bridges replacing the swing bridges at Canal and Main streets. Bids are advertised to be submitted May 8th, 1901, for a Scherzer bridge to replace the swing bridge at Randolph street.

The Scherzer Rolling Lift Bridge Co., 1616 Monadnock Block, Chicago, have also recently completed plans for a new bridge at State street to replace the present swing bridge, which was extremely obstructive to navigation on account of a sharp bend in the channel of the river at the site of this bridge. The new bridge will give a clear, unobstructed channel for navigation 140 feet wide; the movable span, center to center of bearings, will be 261 feet 8 inches; the roadways, center to center of trusses will be 40 feet 6 inches wide, with two sidewalks each 11 feet wide. As State street is the principal retail business street of the city of Chicago, and the bridge is near the business center, it was decided to make the outlines of the new bridge as artistic as possible without increasing the present cost of the structure. The bottom chord is arched and the top chord projects but slightly above the roadway, thus giving a deck bridge with an unobstructed view. The new bridge, when completed, will not only facilitate navigation, but will present a striking contrast to the present unsightly swing bridge. The new bridge without extra cost for ornamentation will be in harmony with the growing demand for more artistic bridge structures at Chicago. The bridge is so designed that appropriate ornamentation may be added at any time in the future, when funds are available for such purpose. Plans have also been completed for new Scherzer rolling lift bridges to replace the swing bridges at Harrison street and Eighteenth street, and within a few weeks the Scherzer Co., will have completed plans for a new bridge to replace the swing bridge at Polk street. All of the above new bridges will give an unobstructed channel of 140 feet in width, or wide enough to pass side by side two of the largest lake or ocean vessels likely to enter the harbor of Chicago for many years to come. The wide channels provided will enable vessels to pass these bridges very rapidly, and time will also be saved as all bridges are designed to be operated by electricity, and may be opened or closed within thirty seconds.

As soon as these bridges are completed and placed in service, the work of removing the other obstructive swing bridges can be proceeded with, without unduly obstructing the street traffic across the bridges. After all the swing bridges have been removed and replaced by the more modern type of bascule bridge and the obstructive tunnels have been lowered or removed, the largest lake vessels can readily and rapidly reach any point along the fifty-six miles of dock

frontage comprising the present internal harbor of Chicago, and the delays heretofore caused by the slow passage of the vessels through the narrow opening provided by the old swing bridges will be obviated. The highway traffic will also be greatly facilitated as the present comparatively small and frequent vessels will be replaced by larger vessels, less frequent but carrying a larger tonnage. The large, comprehensive plan under which the harbor improvements at Chicago are now being executed so vigorously, indicate that Chicago will not only retain all of its present large marine commerce, but that it will also be prepared for the larger vessels and great increase of marine commerce certain to follow the completion of an adequate ship waterway within the United States, either to the Gulf of Mexico or to the Atlantic ocean.

### STATISTICAL REPORT OF LAKE COMMERCE.

THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE MONTH OF APRIL, 1901.

EAST BOUND.			
Articles.	U. S. Canal.	Canadian Canal.	Total.
Copper, net tons.....	....	....	....
Grain, bushels.....	....	....	....
Building stone, net tons...	280	580	860
Flour, barrels.....	....	....	....
Iron ore, net tons.....	....	....	....
Iron, pig, net tons.....	....	....	....
Lumber, M. ft. B. M.....	....	....	....
Silver ore, net tons.....	....	....	....
Wheat, bushels.....	....	....	....
Genl. Mds., net tons.....	12	8	20
Passengers, number.....	55	230	285
WEST BOUND.			
Coal, hard, net tons.....	....	....	....
Coal, soft, net tons.....	....	....	....
Flour, barrels.....	....	180	180
Grain, bushels.....	....	23,530	23,530
Manf'd iron, net tons.....	....	....	....
Salt, barrels.....	500	....	500
Genl. Mdse., net tons.....	548	620	1,168
Passengers, number.....	50	450	500
Freight:			
East bound, net tons.....	292	588	880
West bound, net tons.....	625	1,040	1,665
Total freight, net tons.....	917	1,628	2,545
Vessel passages, number..	32	72	104
Reg'd tonnage, net tons...	2,982	7,139	10,121

Compiled at St. Mary's Falls canal, Michigan, under direction of Lieutenant Colonel G. J. Lydecker, Corps of Engineers, U. S. A. Joseph Ripley, Assistant Engineer and General Superintendent.

Exaction of Premium.—The exaction of a premium of ten per cent. besides interest loaned on a bottomry bond on a bark having several hundred miles to sail before completing her voyage, is not so extortionate as to invalidate the bond. The Northern Light, 106 Fed. Rep. (U. S.) 748.

### NOTES.

THE Bullock-Wagner sales organization has established a district office at 1624 Marquette Building, Chicago. It will be in charge of Mr. H. B. Foster, who has for about two years served the Wagner Company as sales agent. He will have the able assistance of Mr. E. W. Goldschmidt, formerly of the Western Electric Co., in covering this most important field.

THE shipments of iron ore from Cuba during 1900 reached a total of 445,679 long tons, all of which was sent to the United States. The ore was mined at the Daiquiri mines, in the province of Santiago, and the Juragua mines. It seems that the most serious difficulty which the iron ore industry of Cuba has had to contend with during the past two years has been the scarcity of labor.

THE Jones protective coating, manufactured by the Jones Metal Coating Co., 1456 Monadnock Block, Chicago, has been specified on the Rialto elevator being built at South Chicago by the MacDonald Engineering Co., Chicago; also on the elevators being built for the Rosenbaum Grain Co. at South Chicago, for Churchill & Co. at Buffalo, N. Y., and for the Cincinnati, Hamilton & Dayton at Toledo, O. The manufacturers state that the United States government is making tests of the paint at the Brookland navy yard.

CONSUL-GENERAL GUENTHER, of Frankfurt, Germany, says that the captain of a channel mail steamer, which is equipped with an apparatus for wireless telegraphy, reports that on his last trip a message was received from the French light-ship, which is anchored about twenty-five miles from Dunkirk, stating that the latter would be unable to light up the next night unless help arrived from shore. The captain at once sent a second wireless message to La Panne, on the Belgian coast, from which point it was forwarded to Dunkirk by the regular telegraph line. From this place a boat was dispatched to the lightship and the necessary repairs were made.

THE annual meeting of the stockholders of the Joseph Dixon Crucible Co. was held at the company's main office, Jersey City, N. J., Monday, April 15, and out of a possible vote of 7,345 shares, there were 7,285 shares voted for the re-election of the old Board, consisting of Edward F. C. Young, John A. Walker, Daniel T. Hoag, Richard Butler, William Murray, Edward L. Young and Joseph T. Bedle. President, E. F. C. Young; vice president and treasurer, John A. Walker; secretary, George E. Long were re-elected by the directors. Judge Joseph E. Bedle was also re-elected as counsel.

THE Age of Steel, St. Louis, notes that steps have been taken by the Standard Oil Co. to invade another field of industry. The engineering branch of the Navy is now the object of attack, and as an entering wedge the Oil City Boiler Works, of Oil City, Pa., which is understood to be controlled by the Standard Company, has constructed a boiler, experiments with which are being conducted by a board of naval officers. This board consists of Lieut. Commanders Edwards, W. M. Parks and F. M. Bayley. The boiler is known as the Hohenstein. It is a straight tube boiler, of standard navy length and dimensions, and capable of producing 1,000 horse-power. The Oil City works has spent \$30,000 in the construction of the boiler and is said to have announced that if the experiments cost \$200,000 it will be willing to spend that sum.



## BRITISH SHIPBUILDING RETURNS.

FOR THE QUARTER ENDED 31ST MARCH, 1901.

From the returns compiled by Lloyd's Register of Shipping, it appears that, excluding warships, there were 444 vessels of 1,303,116 tons gross under construction in the United Kingdom at the close of the quarter ended 31st March, 1901. The particulars of the vessels in question are as follows, similar details being given for the corresponding period in 1900 for the purpose of comparison:

Description.	31st March, 1901.		31st March, 1900	
	No.	Gross Tonnage.	No.	Gross Tonnage.
<b>STEAM</b>				
Steel.....	410	1,293,071	459	1,238,555
Iron.....	1	190	49	9,564
Wood and Composite...	4	902	3	980
<b>Total.....</b>	<b>415</b>	<b>1,294,163</b>	<b>511</b>	<b>1,249,099</b>
<b>SAIL</b>				
Steel.....	9	7,120	16	8,350
Iron.....	20	1,833	27	2,973
Wood and Composite...				
<b>Total.....</b>	<b>29</b>	<b>8,953</b>	<b>43</b>	<b>11,323</b>
<b>Total steam and sail....</b>	<b>444</b>	<b>1,303,116</b>	<b>554</b>	<b>1,260,422</b>

The present return shows an increase in the tonnage under construction of about 33,000 tons, as compared with the figures for last quarter. As compared with the return for December, 1898, which is the highest on record, there is a reduction of 98,000 tons. The total displacement of warships under construction at private and government yards is 423,702 tons, 45 vessels of 236,362 tons in the former and 19 vessels of 187,340 tons in the latter.

## NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—OHIO.

TREASURY DEPARTMENT,  
OFFICE OF THE LIGHT-HOUSE BOARD,  
WASHINGTON, D. C., May 3, 1901.

**TOLEDO HARBOR LIGHT STATION.**—Notice is hereby given that, on or about May 6, 1901, the construction of this station will be begun by sinking the crib foundation at the site. On the same date the site will be marked by a fixed red post-lantern light, about 20 feet above lake level, illuminating the entire horizon.

The light will be exhibited from the highest point of the structure during the construction of the station, until further notice.

During thick or foggy weather a large ship's bell will be rung at short intervals.

The station will be located in 21 feet of water in the westerly end of Lake Erie, off the outer entrance to Maumee Bay Straight Channel, about 400 feet north-westerly of the easterly prolongation of its axis, and about  $\frac{3}{4}$  mile lakeward from Maumee Straight Channel Entrance Gas Buoy, No. 1.

Bearings and distances of prominent objects, as taken from the above-named chart, will be:

Turtle Island Light-House, S. 77° 33' W. (W. S. W.  $\frac{7}{8}$  W.), about 3  $\frac{1}{2}$  miles.

Monroe Light-House N. 1° 12' W. (N.  $\frac{1}{8}$  W.) about 9 miles.

Bearings are true; miles are statute miles.

## ST. MARY'S RIVER.

**STRIBLING POINT GAS BUOY, No. 35.**—Notice is hereby given that, on or about May 20, 1901, a black conical buoy, surmounted by a pyramidal lattice work supporting the lantern, showing a fixed white light during periods of 10 seconds separated by eclipses of 10 seconds' duration, and marked "Stribling Point, No. 35," will be established, in 20 feet of water, on the edge of the westerly side of the chan-

nel in the northerly end of Little Mud Lake, St. Mary's river, at the beginning of the turn into Hay Lake Channel, and opposite Stribling Point.

Bearings and distances of prominent object from gas buoy will be:

Harwood Point Range Front Light, N., about 3,500 feet ( $\frac{2}{3}$  mile).

Hen and Chickens Range Rear Light, S. W. by W.  $\frac{3}{4}$  W., about 3,600 feet ( $\frac{1}{2}$  mile).

The gas buoy will take the place of the float light now privately maintained.

**LITTLE MUD LAKE UPPER BUOY, No. 35.**—On the same date this black spar buoy, stationed close to the intended position of Stribling Point Gas Buoy, will be permanently discontinued.

Bearings are true; miles are statute miles.

By order of the Light-House Board:

W. MAYNARD, Captain, U. S. N., Naval Secretary.

**FRANKFORT PIERHEAD LIGHT STATION.**—Notice is hereby given that, on or about May 11, 1901, a blower siren, operated by compressed air, will be established at this station on the outer end of the south pier at the entrance to the harbor of Frankfort, easterly side of Lake Michigan, to sound, during thick or foggy weather, blasts of 3 seconds' duration separated by silent intervals of 3 seconds, thus:

Blast	Silent interval	Blast	Silent interval
3 sec.	3 sec.	3 sec.	3 sec.

The signal is located in the tower.

If the siren should be disabled the bell will be sounded as heretofore.

By order of the Light House Board.

N. H. FARQUHAR,  
Rear Admiral, U. S. Navy, Chairman.

## VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	1,180,000	254,000	132,000		25,000
"afoat.....	168,000				
Chicago.....	10,111,000	5,781,000	2,962,000	387,000	178,000
"afoat.....	543,000	842,000	140,000		
Detroit.....	219,000	335,000	1,070	14,000	7,000
Duluth.....	10,151,000	5,226,000	1,365,000	420,000	75,000
"afoat.....	138,000				
Fort William, Ont.	2,147,000				
Milwaukee.....	678,000	725,000	310,000	1,000	15,000
"afoat.....	66,000	228,000	372,000		
Port Arthur, Ont.	250,000				
Toledo.....	631,000	448,000	226,000	2,000	2,000
Toronto.....	49,000		1,000		40,000
On Canals.....	16,000		100,000	16,000	
On Lakes.....	1,886,000	1,580,000	2,488,000		184,000
On Miss. River.....	121,000				
<b>Grand Total.....</b>	<b>46,668,000</b>	<b>18,665,000</b>	<b>12,526,000</b>	<b>946,000</b>	<b>695,000</b>
Corresponding Date, 1899.....	<b>49,825,000</b>	<b>18,137,000</b>	<b>7,937,000</b>	<b>1,143,000</b>	<b>1,195,000</b>
<b>Increase.....</b>			<b>162,000</b>		
<b>Decrease.....</b>	<b>1,684,000</b>	<b>630,000</b>		<b>24,000</b>	<b>1,000</b>

While the stock of grain at lake ports only is here given the total shows the figures for the entire country except the Pacific Slope.

## VESSELS CLASSED.

Vessels classed and rated this week by the American Bureau of Shipping, New York, in the "Record of American and Foreign Shipping," are as follows:

American screw Esperanza, American schooner J. C. Strawbridge, schooner Martha P. Small, schooner Clara Barton, bark Carrie Winslow, three-masted schooner Susie B. Dantzler, British screw Zealand, British schooner Zeta, British schooner J. B. Martin and Swedish bark Karuna.

## SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

**Passenger's Baggage—Loss by Negligence.**—The loss of a passenger's baggage is presumptively by negligence of the carrier, it having been delivered into the custody of its proper agent, and no excuse being given for its disappearance. The Priscilla, 106 Fed. Rep. (U. S.) 739.

**Admiralty—Appeal—Review of Findings of Fact.**—Findings of fact by a court of admiralty are presumptively correct, and, while reviewable on appeal, where they are made on conflicting testimony given in the presence of the judge his conclusion will be treated with great respect. The Anacae, 106 Fed. Rep. (U. S.) 742.

**Maritime Liens—Services as Watchman.**—A watchman employed for a vessel by the master by the day for no definite period is not entitled to a lien on the vessel for wages on account of services rendered under such contract after the vessel has been taken into legal custody. The Northern Light, 106 Fed. Rep. (U. S.) 748.

**Requisites and Validity of Bond.**—A bottomry bond, which does not purport to create any personal liability, and which is payable five days after the arrival of the ship at her port of destination, expresses a contract by which the debt is subject to the maritime risk essential to support such a bond. The Northern Light, 106 Fed. Rep. (U. S.) 748.

**Admiralty—Appeal—Correction of Record.**—A party to an appeal in admiralty is entitled to a writ of certiorari to require the clerk of the district court to include in the record, and properly certify, documents which were used in evidence but have been omitted from the record. The Margaret B. Roper, 106 Fed. Rep. (U. S.) 740.

**Admiralty—Jurisdiction—Maritime Contract.** A contract by which a steamship company agreed to reserve space for certain cargo for foreign shipment, and the other party bound itself to furnish such cargo at a specified rate of freight, is maritime in its nature, and an action to recover damages for its breach is within the jurisdiction of a court of admiralty. Baltimore Steam-Packet Co. vs. Patterson et al., 106 Fed. Rep. (U. S.) 736.

**MARITIME LIENS—Demurrage—Sufficiency of Libel.**—A libel which alleges that libellant hired a lighter to persons engaged in furnishing a cargo of lumber to be loaded on a vessel, and that the lighter was detained by the master of the vessel, not on account of the hirers, but for the benefit of the vessel, for fourteen days after the expiration of the time allowed by the custom of the port for unloading it, but which contains no averment as to whose duty it was to unload it, and avers no contract with the vessel or her master, is insufficient to state a cause of action in rem against the vessel for the demurrage. Dunwoody vs. The Campbell, 106 Fed. Rep. (U. S.) 542.



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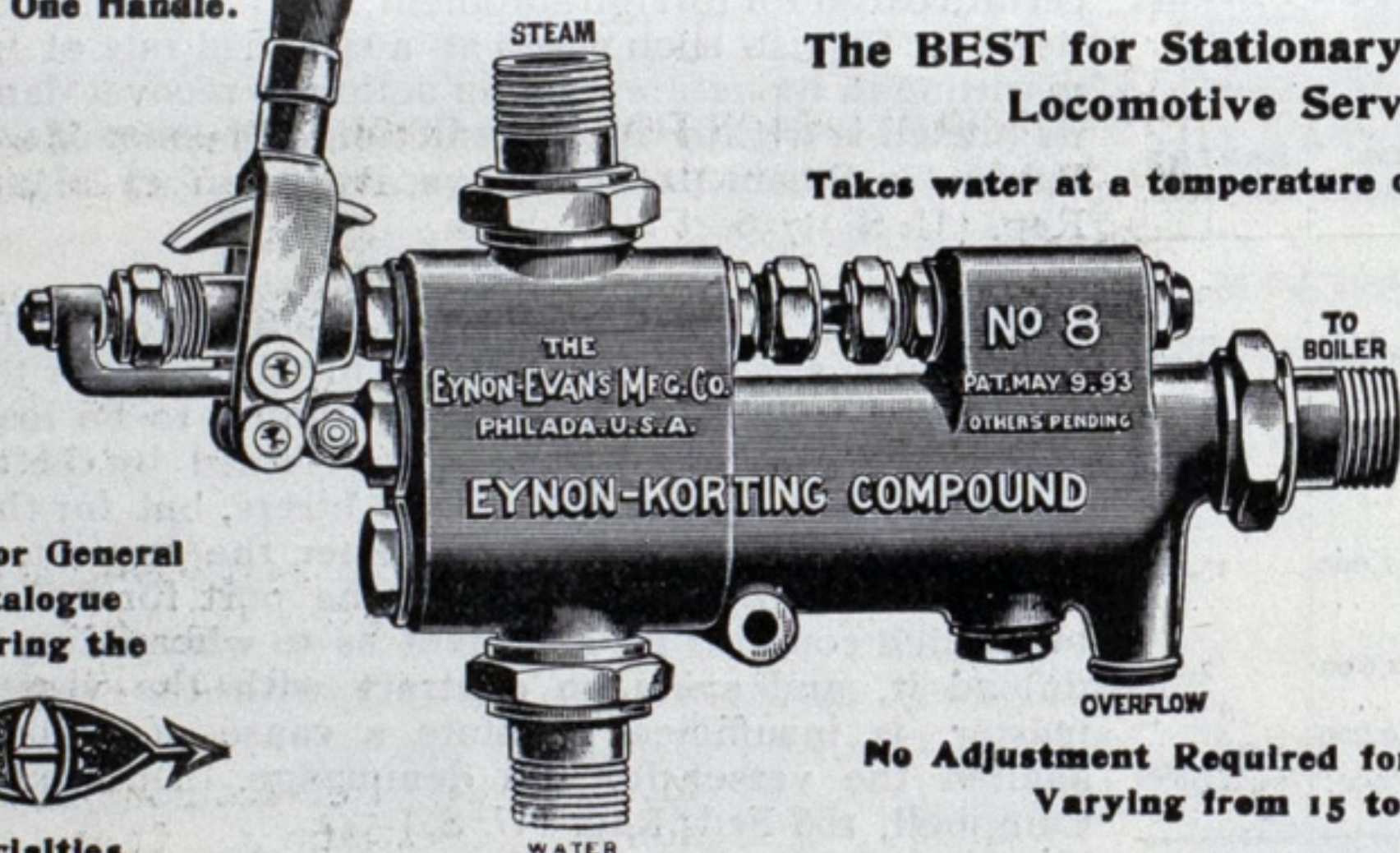


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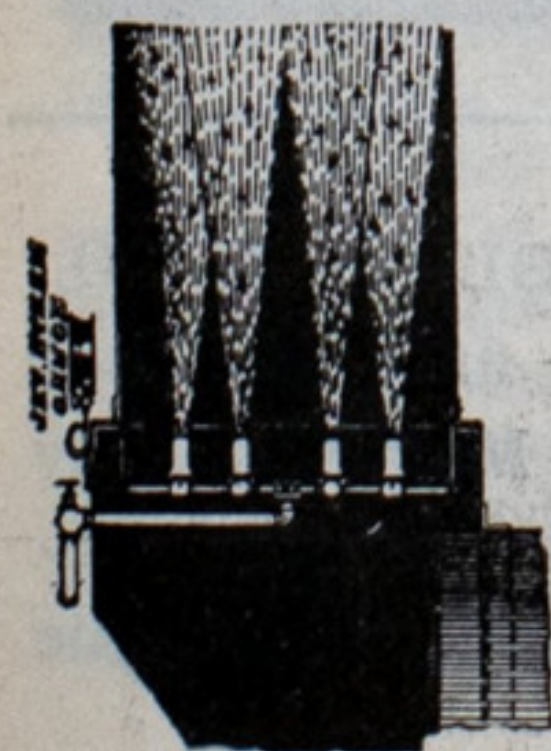
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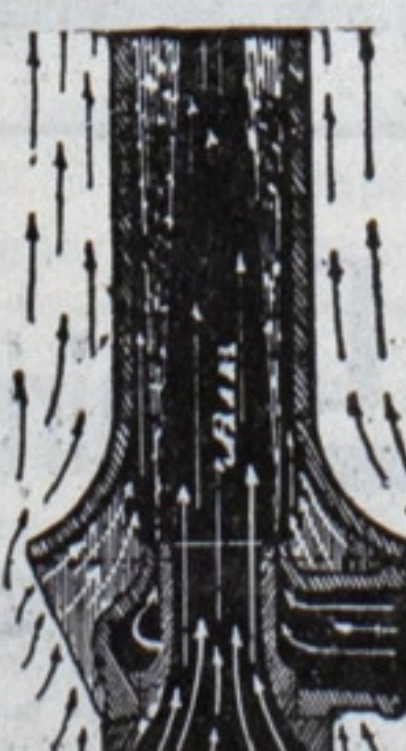
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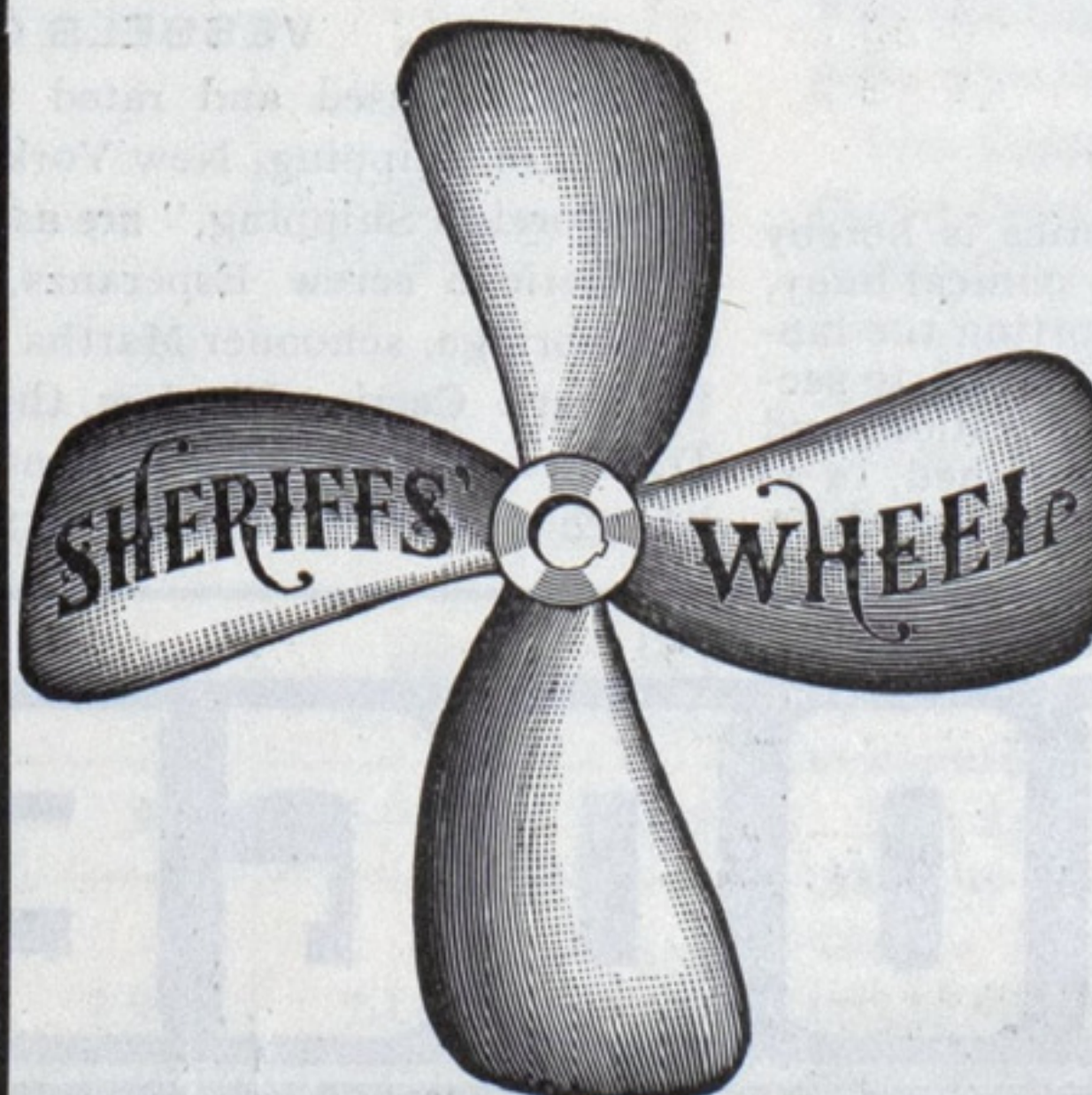
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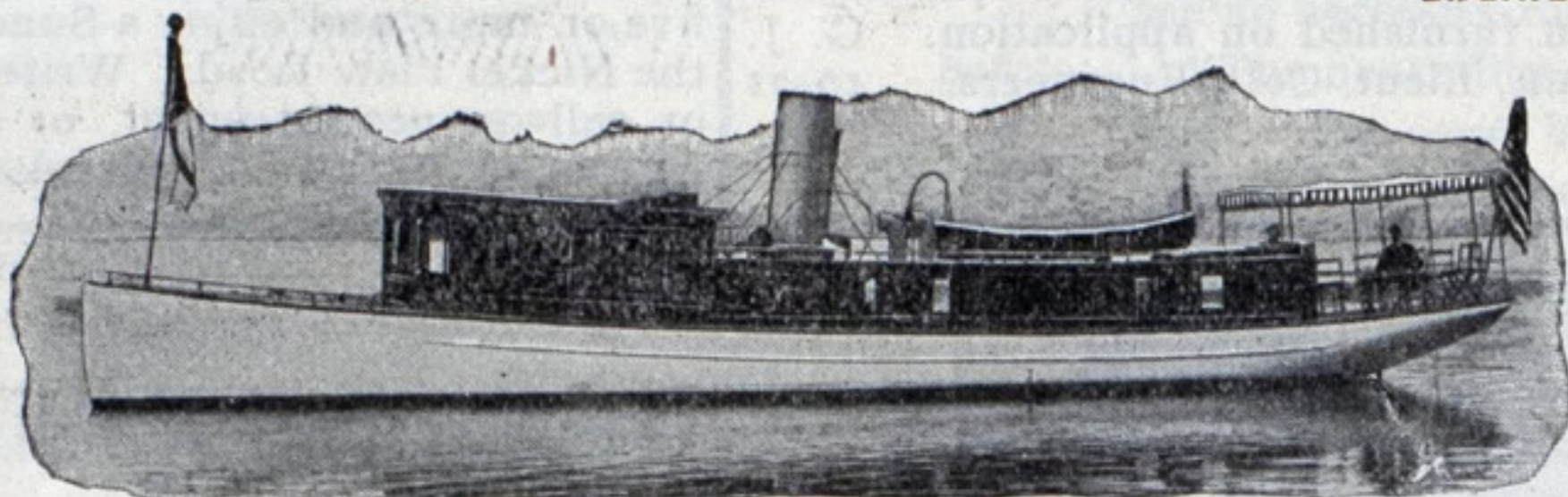
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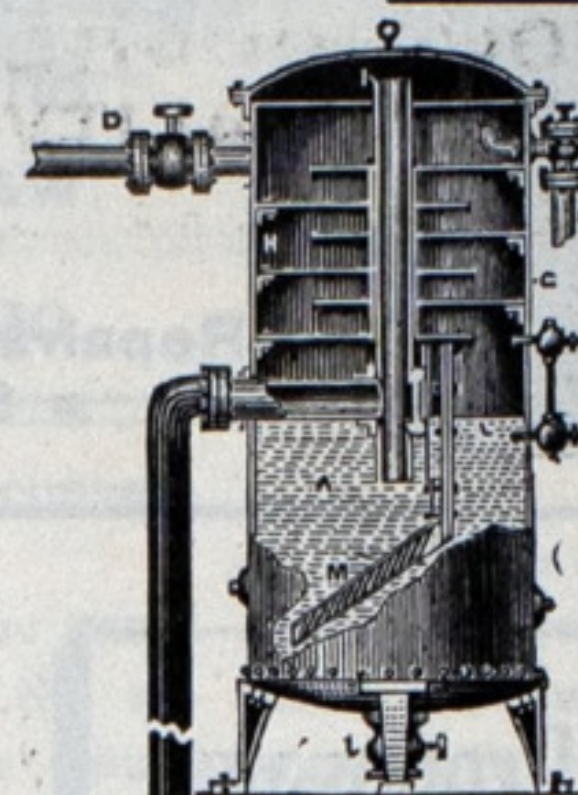
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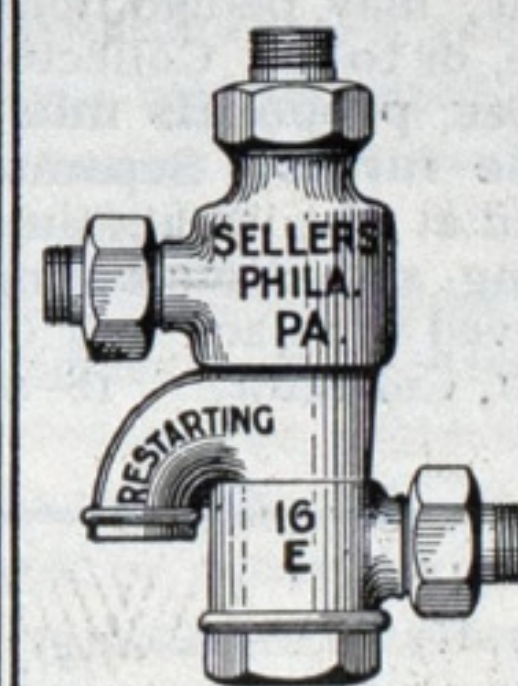
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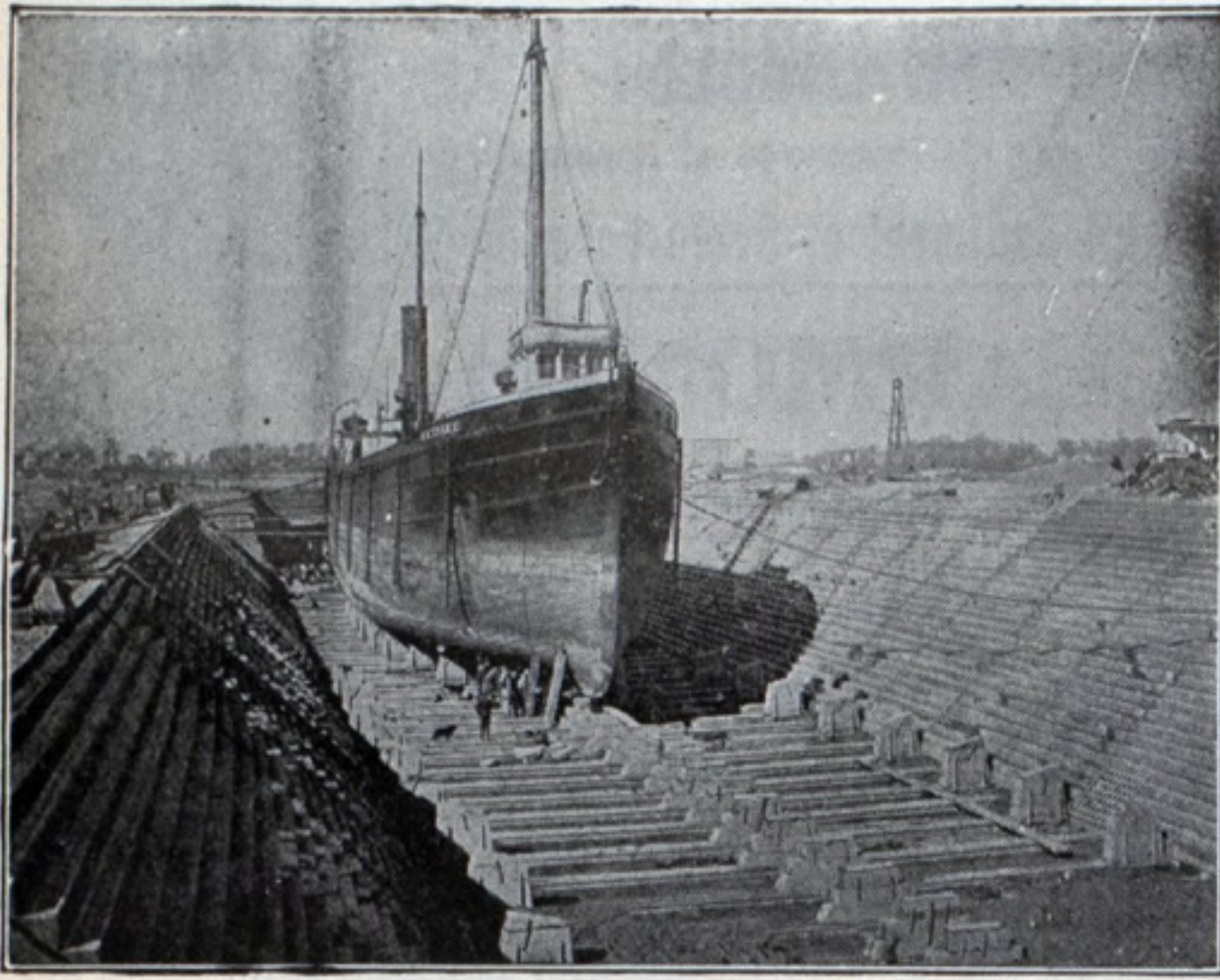
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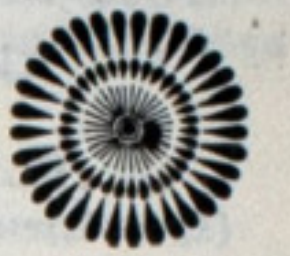
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## Government Proposals.

U. S. ENGINEER OFFICE, Custom House, Cincinnati, O., April 9, 1901. Sealed proposals for one 30-foot length, flat-bottomed, steel-hulled, stern-wheeled steam launch complete, will be received here until 2 p. m., May 14, 1901, and then publicly opened. Information furnished on application. WM. H. BIXBY, Major, Engrs. 16-19

CUSTOM HOUSE, Detroit, Mich., Collector's Office, May 1, 1901. Supplies for Revenue Vessels. Sealed proposals for supplying ship chandlery, rations and coal to vessels of the Revenue Cutter Service, regularly stationed, or temporarily, at Milwaukee, Wisconsin, or Detroit, Mich., and to be delivered on board said vessels at the places named during the fiscal year ending June 30, 1902, will be received by the Collectors of Customs at the ports named until 2 o'clock p. m. of May 14, 1901. The proposals for deliveries at Milwaukee will be addressed to the Collector of Customs at that port, and those for deliveries at Detroit to this office. All proposals received will be publicly opened on the day and hour specified by the respective collectors. The coal furnished to be anthracite or bituminous of best quality; uniform in character, to weigh 2,240 pounds to the ton; to be delivered on board the vessels at such times and in such quantities as may be required, at localities readily accessible to said vessels, and to be subject to inspection as to quality and weight. Bidders will name the prices both for steaming and stove coal, and also their facilities for furnishing the vessels with fresh water, and their charges therefor. Blank forms of proposals, with schedules showing articles of ship chandlery and component parts of rations, may be had upon application to this office, or to the Collector of Customs at Milwaukee; proposals must be submitted on these forms. Separate bids will also be received at the same time and places for lubricating and illuminating oils. The right is reserved to reject any or all bids. JOHN T. RICH, Collector. 18-19

U. S. ENGINEER OFFICE, Custom House, Cincinnati, O., April 24, 1901. Sealed proposals for hire of one or more dredging plants, each consisting of one dredge, one towboat, and three dump scows, for use on Ohio river, will be received here until 2 p. m., May 29, 1901, and then publicly opened. Information furnished on application. WM. H. BIXBY, Maj., Engrs. 18-21

TREASURY DEPARTMENT, Office of General Superintendent U. S. Life-Saving Service, Washington, D. C., May 4, 1901. Sealed proposals will be received at this office until 2 o'clock p. m. of Friday, the 31st day May, 1901, and then publicly opened, for furnishing supplies required for the use of the Life-Saving Service for the fiscal year ending June 30, 1902; the supplies to be delivered at such points in New York City, Grand Haven, Mich., and San Francisco, Cal., as may be required and in the quantities named in the specifications. The supplies needed consist of Beds and Bedding, Blocks and Sheaves, Cordage, Crockery, Furniture, Hardware, Lamps, Lanterns, etc.; Lumber, Medicines, etc.; Paints, Oils, etc.; Ship Chandlery, Stoves, etc.; Tools and Miscellaneous Articles; all of which are to be enumerated in the specifications attached to the form of bid, etc., which may be obtained upon application to this office, or to the Inspector of Life-Saving Stations, 17 State St., New York City; Superintendent Twelfth Life-Saving District, Grand Haven, Mich., and Superintendent Thirteenth Life-Saving District, New Appraiser's Stores, San Francisco, Cal. Envelopes containing proposals should be addressed to the "General Superintendent U. S. Life-Saving Service, Washington, D. C.," and marked on the outside "Proposal for annual supplies." The right is reserved to reject any or all bids, and to waive defects, if deemed for the interests of the Government. S. I. KIMBALL, General Superintendent. 19-20

## Anywhere and Return for \$1.00.

U. S. ENGINEER OFFICE, Jones Building, Detroit, Mich., May 6, 1901. Sealed proposals for dredging and other work required for removing obstructions to navigation in main Ship Channel between head of St. Clair and mouth of Detroit rivers, will be received here until 12 noon (standard time) May 28, 1901, and then publicly opened. Information furnished on application. G. J. LYDECKER, Lieut.-Col., Engineers. 19-21

The Nickel Plate Road announces to the public that on Sunday, May 5th, it will inaugurate its usual summer Sunday excursions for parties of five or more traveling together on one ticket between any two stations on its line within a distance of 100 miles; the cost for which for each individual will be but \$1.00. Organize your parties of five or more, and enjoy a Sunday outing on the Nickel Plate Road. Write, wire, 'phone or call on nearest agent, or address E. A. AKERS, C. P. & T. A., Cleveland, O. 57-19



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